Llywodraeth Cymru
Welsh Government

Foresight for sustainable development and well-being governance in Wales

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Executive summary

Aim of the research and methodological approach

This research, funded by the ESRC Policy Fellowship scheme that ran between February 2022 and August 2023, explores the challenges and opportunities of integrating long-term thinking through foresight in policymaking and provides the Welsh Government with the evidence base to further develop its foresight functions. The inception phase of the Fellowship was dedicated to the research co-design. During the delivery phase, thirty-five interviews focussed on the challenges and opportunities of using foresight for policymaking as well as generating insights into different foresight organisational arrangements in other selected governments. Pilots with three Welsh Government policy teams provided a granular perspective on what foresight could look like in the context of the Welsh Government, while two final stakeholder workshops were organised to review the research findings and discuss enabling mechanisms to develop long-term decision-making in the context of the Well-being of Future Generations (Wales) Act 2015 (WFGA).

Key insights from the literature

The literature reviewed in this report focuses on participatory, perspective, and policy-focused foresight approaches that can be used to support policymakers in navigating uncertainty and develop future-regarding policies. However, while foresight can be potentially transformative, it is not without challenges. Scepticism and resistance, together with scarce resources and low levels of futures literacy, which encompasses the skills needed to apply *foresight,* can hinder foresight applications in governments. This is exacerbated by the fact that evaluation of foresight activities is a critical but challenging area, and this makes it difficult to articulate and demonstrate the contribution of foresight to policymaking. In developing foresight functions, it is important that governments consider local circumstances to build effective and sustainable institutional models.

Key insights from the international case studies

Approaches to foresight in governments in Portugal, Finland, the United Kingdom (UK), and Flanders were analysed to draw out common themes. These governments use foresight in decision-making in different ways. Foresight functions and their organisational settings vary based on respective priorities, public administration traditions, organisational cultures and needs. In all cases, capacity to support projects and build capabilities across government and beyond is often a challenge. Application of foresight tools alone is not enough to deliver a systemic shift towards long-term and anticipatory interventions. Rather, an organisational focus on developing actions and applying lessons learned from foresight is key. This process is strengthened by in-house dedicated resources that specifically focus on foresight and can ensure that organisations' capacity and capability for foresight is not eroded by demands associated

with changing needs (e.g. when responding to an emergency). Building senior leader buy-in is also an important element that helps overcoming scepticism and resistance. In addition, international partnerships and cooperation with other governments or international organisations such as the OECD can increase the profile and effectiveness of foresight activities, thus also increasing its perceived value as a core function.

Key insights from Wales

Participants from Wales agreed that the WFGA has increased the visibility and the relevance of foresight in terms of language and expectations. The WFGA is seen as a common platform that is driving the development of a dynamic foresight ecosystem within the Welsh Government and in the Welsh public sector. In Wales, some of the key public and third sector organisations have strong in-house foresight capabilities and skills and often work together collaboratively on projects or through knowledge exchange. Within the Welsh Government, some Directorates, for example the Strategic Evidence Unit within the Climate Change and Rural Affairs Group, have in-house capacity and capabilities to apply foresight and many long-term Welsh Government strategies, such as the Transport strategy or the Welsh Language Strategy were informed by this practice. Interview data and the three policy pilots indicated that there is a strong demand for more foresight work and for more integration of futures thinking in policymaking. However, significant gaps in organisational capacity and capabilities remain. While the WFGA was often mentioned as a key enabler for foresight work, tendencies to work in silos, scarcity of time, futures literacy gaps, organisational mechanisms and disconnects with the political sphere were mentioned as present barriers.

Conclusions

Foresight enhances well-being and sustainable development governance by integrating long-term perspectives and supporting policymakers in acknowledging and navigating uncertainty and understanding the long-term consequences of decisions. Dedicated in-house foresight resources are key for the continuity and sustainability of foresight especially during crises, but to be transformative foresight should also be embedded in policymaking as a practice. In the Welsh Government, foresight tends to be piecemeal and often conducted ad hoc rather than embedded within the policy cycle or used to directly inform initiatives and decision-making. The WFGA constitutes a transformative platform upon which the Welsh Government can build on existing foresight resources as well as on internal and international collaborations with other governments and stakeholders. Under this legislative frame, the Welsh Government has the opportunity to address current futures literacy gaps, and unlock mechanisms to overcome barriers such as existing silos between policy teams and embed long-term thinking in the Welsh Government and in the broader Welsh public sector.

1 Introduction

Main takeaways

- This research was funded through the ESRC Policy Fellowship: Welsh Government (Welsh Government) Sustainable Futures (February 2022 – August 2023).
- Alongside seven well-being goals, the Well-being of Future Generations (Wales) Act 2015 (WFGA) enshrines in law 'long-term' as one of the five ways of working sustainably which the Welsh Government and public bodies in Wales should apply for the delivery of the well-being goals.
- The sustainable development principle defined in the WFGA adopted the Bruntland definition of sustainable development which acknowledges the right of future generations to meet their own needs.
- Foresight approaches are effective in enabling long-term thinking within Governments.
- Barriers and enablers to strengthening foresight functions and applications in the Welsh Government are discussed in the report and lessons learned from other governments are outlined to inform the final recommendations. Particular attention is given to the contribution of foresight to well-being and sustainable development governance.

1.1 Background to the research

The Economic and Social Research Council (ESRC) is part of UK Research and Innovation (UKRI), the national funding agency for science and research in the UK. ESRC funds economic, social, behavioural, and human data science. Under the 2021 ESRC Policy Fellowships initiative, researchers based at an eligible UKRI organisation were invited to apply to work for up to 18 months with a UK or devolved government host department to inform policy on a priority policy area and to improve knowledge exchange between policy and academia. As part of this scheme, the Welsh Government secured three ESRC Policy Fellowships on sustainable futures, on environment and rural affairs, and on education.

The ESRC Policy Fellowship hosted by the Welsh Government Sustainable Futures Division (which ran between February 2022 and August 2023) focussed on identifying challenges and opportunities for strengthening long-term thinking in Welsh Government through foresight techniques which are increasingly used by governments around the world for this purpose.

This report provides an overview of the research process and findings, including some key recommendations on how to embed long-term thinking in Welsh Government strategic settings and in policymaking. As well as drawing evidence from the Welsh experience, the research draws on international case studies and identifies different models and approaches taken by other governments, with the aim of translating key lessons to the case of the Welsh Government.

1.2 Research context: Futures and foresight to support long-term decision-making and sustainable development

Wales is considered a leader in sustainable development (SD) and has been at the forefront of ambitious and ground-breaking legislation, including the Well-being of Future Generations (Wales) Act (2015) (henceforth, the WFGA). The WFGA enshrines in law the principle of SD and well-being, with a focus on protecting the rights of future generations to meet their well-being needs. Many countries are looking at the experience and approach taken by Wales. In Scotland, the proposed Wellbeing and Sustainable Development (Scotland) Bill is, at the time of writing, being considered, whereas in the UK Parliament, a Wellbeing of Future Generations Bill is currently in its second reading in the House of Commons. Countries, such as Finland, Canada, New Zealand, Scotland, Wales and Iceland have committed to creating economies based on well-being. Similarly, the 2023 European Union (EU) Strategic Foresight Report describes both the future social and economic challenges governments need to consider when planning and implementing policies and sets out ten areas for action to achieve a sustainable Europe.

Against the backdrop of the poly- or perma-crisis[1], all decision-making and decision-makers need to anticipate and understand previously unseen and unexpected problems (Muiderman *et al.*, 2022). The OECD stated that increasing anticipatory capacity leads to better decision-making as it increases the ability of governments to deal with uncertainty, complexity, and be better prepared to respond to crises (OECD, 2019; Prítyi, Docherty and Lavery, 2021). While predicting and responding to potential future risks can help governments to respond better to crises, anticipation can also enable them to pursue long-term and well-being commitments with consideration of the rights of future generations. Both motivations require a shift towards a way of governing that considers a long-term perspective. Foresight can support governments in tackling this challenge (van der Steen and van Twist, 2013; Wayland, 2015; Muiderman *et al.*, 2022).

1.3 Research context: Wales and the Well-being of Future Generations (Wales) Act 2015

Wales is one of three devolved legislatures in the UK with the power to pass primary and secondary legislation in devolved matters (Torrance, 2022). In the founding legislation for devolution, the Government of Wales Act (1998), the then National Assembly for Wales had a duty to make a scheme to promote sustainable development, this was carried forward into the Government of Wales Act (2006) where the duty was placed on Welsh Ministers. SD is included in Welsh law as a key principle that public sector actors have had to promote (Stevenson and Richardson, 2003; Nesom and MacKillop, 2021). Since 2015, the landscape in which the Welsh Government and the Welsh public sector operate has been shaped by the provisions of the **Well-being of Future Generations (Wales) Act 2015 (the WFGA)**.

The WFGA was developed following a national conversation and visioning exercise called 'The Wales We Want', and it introduces ground-breaking provisions to protect the rights of future generations (Davies, 2017; Azam, 2020). It does so by identifying seven national well-being goals, which broadly reflect the **United Nations Sustainable Development Goals (SDGs)** (Nesom and MacKillop, 2021) and which apply to most public bodies in Wales[2]. These are: a prosperous Wales; a resilient Wales; a healthier Wales; a more equal Wales; a Wales of more cohesive communities; a Wales of vibrant culture and thriving Welsh language; a globally responsible Wales.

[1] Both terms describe an ongoing state of crisis. Poly-crisis refers to there being multiple, interconnected global crises whereas perma-crisis is a combination of permanent and crisis and describes the expectation that the state of crisis will not end.

[2] For a comprehensive overview of the Well-being of Future Generations Act and its architecture, see: **www.gov.wales/well-being-future-generations-act-essentials-html** [last access: 31 May 2023].

In pursuing these goals, the WFGA requires public bodies to follow five ways of working sustainably, including long-term thinking, to maximise their contribution to the well-being goals and their well-being objectives[3].

To support organisations and civil servants in applying long-term thinking and provide them with robust and reliable data, every legislative term (i.e. every five years) the Welsh Government publishes a Future Trends Report (FTR), the latest iteration of which consists of a narrative summary, a set of infographics, and an evidence pack. The FTR is also available in the Welsh language. In its 2021 iteration, the FTR identifies six megatrends that are likely to affect the social, economic, environmental, and cultural well-being of Wales, namely: people and population; inequalities and opportunities; planetary health and limits; technological evolution; public finances; public sector demand and digital change.

The FTR articulates how the six megatrends manifest in the Welsh context, identifying the associated potential impacts at a granular level. The translation of global megatrends into local impacts, in theory, should strengthen the direct applicability of the FTR as a tool to inform policymaking with long-term insights and should support policymakers in creating a bigger picture for policies and interventions in line with the well-being goals. For example, the FTR can be directly used as an evidence-base to support foresight exercises (e.g. scenarios), create policies with a long-term perspective, and support the delivery of the well-being goals (Welsh Government, 2021). Indeed, a stated goal of the Future Trends Wales agenda is to see the FTR used by strategic and policy teams as a basis to identify new risks and opportunities.

In 2021, the Welsh Government Sustainable Futures Division identified four areas of improvement in the Future Trends Wales agenda, which highlighted a need to understand better how foresight resources, including the FTR, are currently used, how they can be used effectively to inform policymaking and to identify key trends likely to affect policy delivery. These are:

1. **Awareness and accessibility:** improving the understanding and accessibility of the Future Trends Wales resources.

2. **Use and application:** understanding the different users and ensuring effective application of the Future Trends Wales resources.

3. **Data and content:** ensuring the trends are up to date, relevant and appropriate.

4. **Analysis and scenarios**: drawing out key findings and observations by understanding what seems to be happening, what is happening and what might happen.

This report contributes to these areas of improvement by providing an evidence base for enhancing and embedding foresight within the Welsh Government's decision-making, in the context of major societal disruptors and crises, such as the COVID-19 pandemic.

The sections below detail the questions and objectives underpinning the research process and clarify the research's scope.

[3] The five ways of working are: collaboration; integration; involvement; prevention; long-term.

1.4 Research aims, questions, and scope of the report

This research pursued two interrelated aims of strategic importance **(S)** that relate to the areas for development outlined above. These were:

S1: To enhance decision-making through more effective use of foresight and futures evidence.

S2: To strengthen capabilities and mechanisms within Welsh Government to analyse and respond to crises in line with sustainable development principles.

From these research aims, the following research questions were formulated **(Q)**:

Q1: What are the pathways to strengthen sustainability and well-being decision-making through foresight?

Q2: What mechanisms can strengthen decision-makers' capability to develop foresight in a context of crisis and in line with SD and well-being principles?

These research questions will be tackled through the following objectives **(O)**:

O1: To review the literature on foresight definitions and applications in government settings.

O2: To draw lessons on the barriers and enablers to developing foresight functions and applications from other governments and international organisations.

O3: To explore the current use of foresight practice and methods in Welsh Government, including in the context of crisis or short-term disruption.

O4: To test foresight applications in the context of Welsh Government policymaking and the WFGA.

This report's scope rests within the exploration of foresight functions and programs within the Welsh Government. As such, it does not look at the role of other public sector organisations listed in the WFGA, nor does it look specifically at the role of the Future Generations Commissioner for Wales. Nevertheless, extensive engagement with actors working in these organisations helped to inform this report through interviews, informal conversations, and participation in networks and workshops. These formal and informal engagement activities generated valuable insights into the current and prospective role that the Welsh Government plays as an actor in the broader Welsh foresight ecosystem.

Furthermore, acknowledging that the FTR is only one of the possible inputs and supporting tools that can enable long-term thinking, this report looks more broadly at foresight practices and the multiple tools and techniques employed in governments, with a particular focus on SD and well-being governance.

1.5 Structure of the report

The report has six chapters.

Chapter 1 introduces the background to this research, its aims, and the report's structure.

Chapter 2 provides an overview of the key concepts and the definition of foresight used in this report. Various terminologies used in this field are outlined and explained. In this report, I use the term foresight to capture both the practice of and the set of tools involved in systematically considering the future. Furthermore, Chapter 2 justifies using the term future-regarding instead of *future-focused* or *future-oriented*. Drawing on published academic literature, the chapter highlights the role foresight plays in public

decision-making and its specific contribution to strengthening government sustainable development and well-being governance and decision-making. The chapter also points to the key limitations of foresight that must be considered for transparent and inclusive applications.

Chapter 3 details the methodology of the research. This is based on secondary data analysis (documentary) and primary data collection (interviews, foresight policy pilots, and workshops) with foresight experts and Welsh Government civil servants.

Chapter 4 presents the key international research findings, outlining the barriers and enablers of foresight applications from the perspectives of international organisations and other European national and sub-national governments.

Chapter 5 presents the key findings relating to the Welsh Government.

Chapter 6 contains conclusions, including limitations of the report, areas for future research and consideration, and key recommendations.

A glossary of terms provides short definitions for key terms used in the report. Terminology included in the glossary is underlined the first time it is used in the report. Finally, Appendix 1 sets out the steps to replicate the foresight policy pilots conducted in this, and Appendix 2 provides an overview of research participants.

2 Key concepts

Main takeaways

- Foresight supports policymakers in analysing long-term trends and discusses multiple possible, plausible, or preferable futures.
- When conducting foresight exercises, selection of more than one method helps maximise their effectiveness and robustness. Approaches should be participatory, prospective and policy related, as well as being inclusive and appropriate to the context.
- Policymakers can use foresight to develop future-regarding policies, but some trade-offs cannot be avoided.
- Among the benefits of foresight, the literature has identified an enhanced anticipatory capacity, reduced uncertainty and created a space for multi-stakeholder collaboration and strategic thinking.
- However, foresight often needs to be more embedded within the policy cycle and can encounter scepticism and resistance. Scarce resources and low levels of futures literacy can also hinder foresight applications in governments. Evaluation of foresight activities is a critical but challenging area for practitioners.
- Governments can follow different models to develop their foresight functions that are either more centralised or more dispersed and network-based. Consideration of the local institutional context will determine which pathway is best suited.

2.1 Definitions of foresight in this report

Governments are facing multiple co-occurring crises driven by acute and chronic risks (UK Government, 2022), also referred to as fast-burning or slow-burning issues (Seabrooke and Tsingou, 2019). In the context of the poly- or perma-crisis that has characterised Europe since at least 2008 (Ferrera, Kriesi and Schelkle, 2023), governments need to be able to design long-term sustainable solutions to current problems while at the same time increasing their preparedness to face short-term disruptions (May, Sapotichne and Workman, 2009; Hartley, Kuecker and Woo, 2019; Édes, 2021).

While foresight is not a new concept (Georghiou, 2008; Jemala, 2010; Gidley, 2017; Bezold, 2019; Hines, 2020), over the past few decades it has gained increasing prominence as a practice that supports policymakers in understanding the key drivers that affect long-term strategic or policy developments and to use these insights to inform decision-making. (Georghiou, 2008; Destatte, 2010; Habegger, 2010; Ramírez and Wilkinson, 2016; Baroud, 2022).

In general terms, foresight can be defined as a set of methods, for example, horizon scanning and scenario planning, that allow policymakers to analyse long-term emerging trends and develop multiple scenarios to stimulate discussions and identify strategic directions based on a shared understanding of potential risks and opportunities (Voros, 2001; Habegger, 2010; OECD, 2019)[4].

Foresight is, therefore, different from **forecasting**, which involves estimation and extrapolation (often through quantification of data) of the future under conditions of uncertainty (Wilkinson, 2017). Foresight deals with uncertainty by considering multiple plausible, probable, or preferable futures to inform today's decisions, shifting away from the language of predictions (Cuhls, 2003; Ramírez and Wilkinson, 2016).

Definitions of foresight in academic studies and practice vary. Slaughter (1990) defined it as a tool that broadens decision-making and entails a mix of futures and strategic management methods (Slaughter, 1997). In this perspective, foresight enables:

- the assessment of the implications of current actions (consequence assessment), and the identification of risks and opportunities before they occur (early warning and guidance)
- the consideration of implications of future events on today's actions (pro-active strategy formulation)
- the articulation and visioning of desired futures (scenarios).

Other authors focussed on foresight as:

- an information-gathering and evaluation process for strategic planning purposes (e.g. Fidler, 2011)
- as a tool to reduce complexity, handle uncertainty, and gain buy-in through intensive engagement and interactions with stakeholders (Schatzmann, Schäfer and Eichelbaum, 2013; Miles, Saritas and Sokolov, 2016)

[4] Appendix 1 provides a list of resources, including freely available toolkits outlining different foresight methods and how they can be applied.

- as a mechanism that enhances learning and the ability to act effectively and reflexively in a fast-changing world (Sarpong and Maclean, 2014).

These differences notwithstanding, what is clear is that foresight is underpinned by the principle, now commonly accepted in the broader discipline of **Futures Studies**, that the **future is open and pluralistic and that we can proactively shape it through today's actions** (Poli, 2017).

The OECD (Prítyi, Docherty and Lavery, 2021) and the United Nations Development Programme (UNDP, 2022) frame foresight as a way to understand the future and to use this understanding to improve decision-making. Sometimes, organisations use the term **strategic foresight** instead or alongside foresight. There isn't a clear-cut and systematic distinction between these two terms in the literature and in practice. For example, the European Commission, refers to foresight as the discipline of exploring the future and to strategic foresight as an approach that seeks to apply and embed foresight into policymaking in a structured and systematic way to directly inform decisions[5].

The UK Government's Government Office for Science (GO-Science), in its *Brief Guide to Futures Thinking and Foresight* (GO-Science, 2022) distinguishes between *futures* (the act of systematically thinking about the future and exploring key factors that can affect future developments) and *foresight* (the application of specific tools and methods to explore a theme or topic)[6].

To synthesise all these perspectives, **in this report foresight is understood as a way of thinking, a practice, underpinned by a set of techniques and methods that help key actors (in this case, policymakers in governments and key stakeholders) to develop future-regarding policies and interventions**. More specifically, this report adopts a definition of a fully-fledged foresight exercise as a process characterised as:

- **participatory**, i.e. involving the interaction of wide groups of stakeholders and expertise to maximise collective insights and strengthen the democratic legitimacy of foresight processes
- **prospective**, i.e. employing traditional methods to frame future-regarding visions, scenarios, or pathways; and
- **policy-related**, i.e. aiming at informing policymaking and prioritisation through long-term insights (Miles, Saritas and Sokolov, 2016, p. 12; Störmer *et al.*, 2020).

2.1.1 Choosing foresight methods

The number of foresight methods that are used for both **exploratory** and **normative** purposes[7] has been steadily growing, and choosing among them can be a daunting task. In general, there is a strong consensus in favour of maintaining a flexible and tailored approach, based on, for example, issues at stake, capabilities, desired outcomes, stakeholders involved, and the time and resources available (Da Costa *et al.*, 2008; Eriksson and Weber, 2008; Könnölä *et al.*, 2009; Haegeman, Spiesberger and Könnölä, 2017).

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5 This definition is published on the European Commission's website on Strategic foresight. Available at: Strategic foresight (europa.eu) [last access: 07 August 2023].

6 In the UK Government's context, the use of foresight as a generic term should not be confused with the programme of foresight projects run by GO-Science. For more information, see www.gov.uk/government/collections/foresight-projects [last access: 15 June 2023].

7 Exploratory foresight aims at describing possible or plausible futures without pursuing a stated goal; normative foresight aims to materialise a desired image of the future (Nikolova, 2014).

Also, while some methods have been specifically developed within the academic field of Futures Studies, others can be borrowed from other disciplines and adapted to become functional foresight tools. Therefore, compiling a prescriptive list of which foresight methods policymakers can apply is, for the purposes of this report, counter-productive[8].

Nonetheless, the choice of methods can have a significant effect on the ability of participants to engage, and will also affect the desired outcomes (Popper, 2008). Each method has different features, strengths, and limitations, and can favour certain professional profiles over others, thus potentially creating accessibility or inclusion barriers for some participants.

Figure 1: Foresight Diamond (source: Popper, 2008)

[8] A review of foresight methods is beyond the scope of this report but publicly available foresight toolkits can serve this purpose. See, for example the GO-Science Futures Toolkit available at www.gov.uk/government/publications/futures-toolkit-for-policy-makers-and-analysts (last access 15 September 2023).

It is, therefore, important to be aware of the fundamental attributes of individual foresight methods to ensure that they are deployed appropriately and are effective in unlocking collective intelligence in a participatory and inclusive way. Equally, understanding the local context and becomes critical to being able to identify the most appropriate methods and adapt them to local circumstances (Ghişa *et al.*, 2011).

Popper (2008) identified some principles that can guide the design of fully-fledged foresight exercises. Figure 1 represents Popper's Foresight Diamond (2008), which categorises foresight methods based on key attributes located at each of the diamond's corners: creativity; expertise; interaction; evidence; and based on whether they are qualitative, semi-qualitative, or quantitative.

Other academics proposed a typology of six foresight frames based on how actors interpret the role and meaning of foresight processes (Minkkinen, Auffermann and Ahokas, 2019)[9].

The six frames are categorised based on the level of pursued change (whether foresight is considered as a tool to explore the future or to influence it); and on the level of perceived unpredictability (whether the future is considered to be more or less predictable).

Selecting more than one foresight method and ensuring a balanced mix between different attributes should help to elicit complementary insights and suit people from different personal or professional backgrounds.

2.2 The role of foresight in policymaking

Governments need to tackle both acute and chronic risks that can bring about short-term as well as long-term consequences. However, it is challenging to distinguish between short-term and long-term issues. MacKenzie (2021a) argued that issues like climate change have both long-term and short-term dimensions that must be simultaneously acknowledged. This author concluded that a clear-cut distinction would be not only impossible, but also not desirable if the aim is to encourage long-term thinking (2021b). Public policy and decision-making, in other words, need to have a broader time horizon that encompasses the short-term as well as the long-term dimensions of the problems they aim to tackle: they need to be **future-regarding**[10]. This is not easy: policymakers may face difficult trade-offs when long-term gains build on short-term cost, a situation that can lead to a bias in favour of the present, or in other words, to excessive discounting of future interests (Boston and Stuart, 2015; Boston, 2016).

However, addressing acute and chronic risks brings practical as well as moral considerations. Issues associated with these risks are often characterised by:

- **complexity** (Thiel, Garrick and Blomquist, 2019), i.e. they involve different policy areas and levels of governments, the so-called multilevel or polycentric governance (Urwin and Jordan, 2008);

[9] The six frames identified in this study are: planning; predictive; visionary; scenaric; transformative; critical.

[10] In MacKenzie's analysis (2022, p. 33), *future-regarding* is more precise than other similar terms such as future-focused or future-oriented, as it rules out the risk of being interpreted as an encouragement to focus primarily on the future, disregarding present's needs. This report adopts this semantic interpretation.

- **uncertainty**, i.e. their frequency, magnitude or impacts are difficult to predict and can be context-specific (Harrison and Geyer, 2021) as well as being influenced by different perceptions of risks and interests (Lange and Garrelts, 2007; Walker and Shove, 2007);
- **long time spans**, i.e. the decisions that we take today, including when responding to a short-term crisis, will have impacts on future outcomes and on the achievement of sustainability and well-being goals (Schäpke and Rauschmayer, 2014).

2.2.1 The promises of foresight

The promise of foresight is to help policymakers strengthen their anticipatory capacity (Heo and Seo, 2021).

Experiences and approaches vary, but foresight's contribution can be both direct and indirect. Direct contribution can involve the earlier stages, including supporting the analysis of issues and provide policy design with insights into how contexts and drivers can affect policy delivery and outcomes in the future (Da Costa *et al.*, 2008). Foresight can also contribute to decision-making indirectly, for instance by increasing awareness of the current and evolving contexts through participatory approaches, which in turn can reduce conflicts and facilitate policy implementation. Other benefits of foresight include:

- **Supporting an evidence-based identification of future risks and opportunities**: In corporate settings, studies found that one of the most valuable contributions of foresight is an enhanced ability to recognise and react to change and reduce uncertainty (Rohrbeck and Schwarz, 2013). Through foresight methods such as analysis of megatrends, Delphi, or weak signals, policymakers can incorporate specific long-term evidence as a complementary input to inform decisions (Störmer *et al.*, 2020). Foresight also encourages policymakers to engage with a variety of data and can signal to the public that policy is based on a wide empirical base (Da Costa *et al.*, 2008). In their systematic review of strategic foresight, Iden *et al.* (2017) find that foresight enables a better understanding of drivers that are likely to bring about significant change, and it can be therefore used to identify appropriate responses.
- **Reducing risks from disruptions and disasters:** although the application of foresight methods in the field of disruption and disaster risk management is not common, researchers have highlighted that there are areas for integration (Jahangiri, Eivazi and Sayah Mofazali, 2017). Foresight can inform the prevention phase of disaster and disaster risk management; it also broadens the visioning ability and the ability to deal with uncertainty, especially when establishing the risk context and when conducting risk assessment and identification activities. Ardeshir and Jahngiri developed and tested a model for integrating foresight and disaster risk management in Iran (2018). In their research, they highlight that previous assessment reports were weak in long-term thinking, and this impacted prevention and preparation activities. Accurate use of foresight can contribute to address this issue, but the academic research on best practice and applications is still evolving.

- **Stress-testing existing or proposed initiatives** against multiple scenarios to make them more fit for the future (OECD, 2019). Scenarios are not the only foresight tools available, but they can be effectively used to explore uncertainties and systematically consider the implications of trends or shared visions (Bezold, 2010). As discussed in the previous section, foresight's potential is maximised through mix-methods approaches; this facilitates transdisciplinary perspectives and a more comprehensive consideration of unintended consequences of decisions (Bengston, Kubik and Bishop, 2012).
- **Creating a space for multi-stakeholder collaboration and participation**. Especially in its more participatory and inclusive forms (Nikolova, 2014), foresight methods gather collective intelligence to build a shared understanding of risks and opportunities, collective goals, and visions, thus putting a strong focus on outcomes. Foresight can be particularly effective in bringing together different cultures and perspectives and this can uncover aspects that may otherwise remain overlooked (Bengston, Kubik and Bishop, 2012). The identification of shared goals and outcomes should be achieved on the back of deliberation and openness to discussing challenging issues and scenarios that can be contested among participants (Bezold, 2010; Rohrbeck and Gemünden, 2011; Wilkinson, Mayer and Ringler, 2014). Even in highly regulated environments, where the role of top-down structures is emphasised, foresight can be successfully applied to complement decision-making with a bottom-up and granular perspective that enriches the process (Sprinz, 2012; Weigand *et al.*, 2014). Foresight should be open to the exploration of even unlikely 'what-if' scenarios, thus encouraging creativity and lateral thinking. This, in theory, should pave the way for policy innovation (OECD, 2019) and encourage collective strategic thinking (van der Meulen, de Wilt and Rutten, 2003). In the academic literature, the creation of a more open, flexible, and dialogic space focussed on outcomes is considered a key element for fostering collaboration in the public sphere, even when dealing with complex issues and circumstances (Docherty, 2022).
- **Enhancing the policy cycle.** Foresight can contribute to all stages of the policy cycle. The UK GO-Science Futures team outlined the contribution of futures and foresight approaches to each stage of the policy cycle that can support policymakers in: defining future focused questions; using foresight to improve policy outcomes; supporting them in choosing foresight tools (2021b). In 2021, the European Commission included foresight in the toolbox for carrying out the Commission's impact assessments (Radaelli and Taffoni, 2022).
- As it focuses on outcomes and draws on broad evidence sources, foresight approaches can become platforms for **joined-up decision-making and cross-departmental dialogue** (Leigh, 2003). This is valuable both for strategic planning and for crisis response. For instance, Gariboldi *et al.* (2021) analysed the experience of four think tanks within the World Health Organisation (WHO) Western Pacific Region Office to strengthen the response to the COVID-19 pandemic. The study shows that foresight offered complementary insights to conventional pandemic responses by allowing a more holistic understanding of the situation, highlighting emerging issues, helping decision-makers to consider a fuller range of possibilities, and identifying new opportunities for cross-departmental collaboration.

This (non-exhaustive) list of the benefits of foresight highlights that governments can deploy foresight to mitigate the difficulties of tackling issues characterised by complexity, uncertainty and long time spans.

2.2.2 The challenges and limitations of foresight

There are also challenges and limitations to foresight applications. These include:

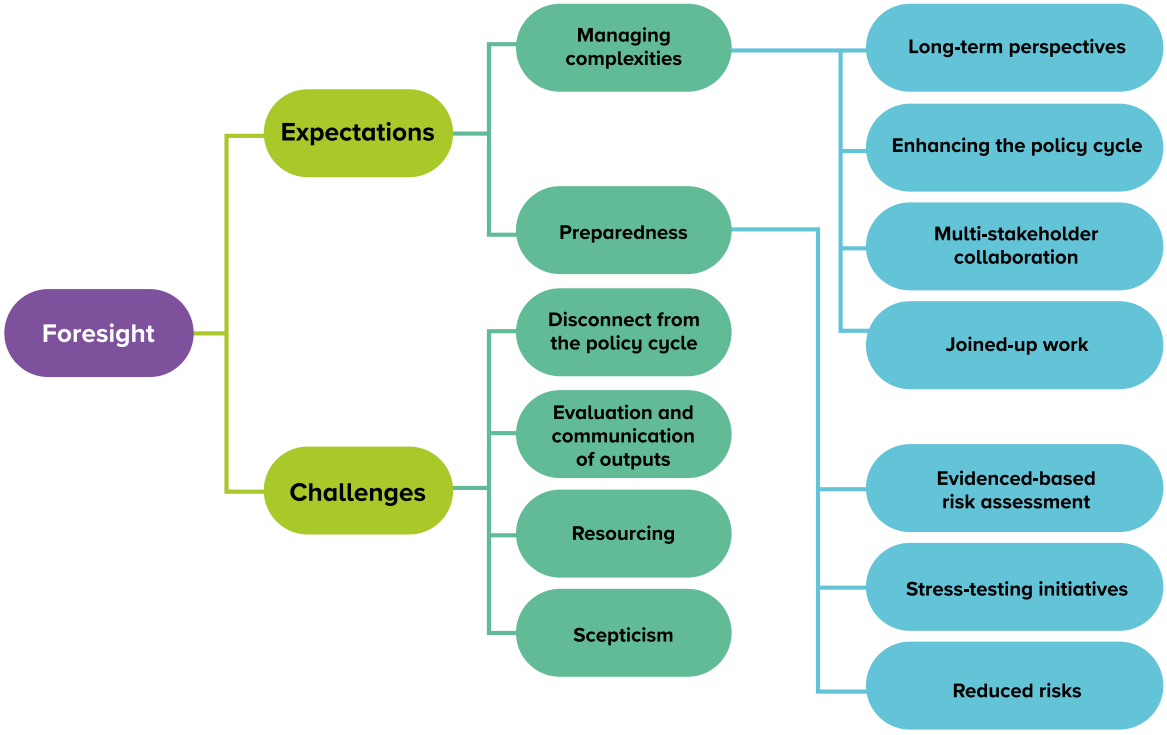
- **Disconnect between foresight outputs and policymaking:** one of the biggest pitfalls acknowledged in the academic literature is the potential disconnect between the temporal scopes of foresight outputs and policymaking. This can occur if foresight exercises are either attended only by senior leaders and not by other decision-makers involved in driving the policy process, or when foresight aims at identifying strategic goals and visions but not at informing individual policies (Bezold, 2010). Particularly significant can be the disconnect with the budget-cycle, which typically has a short time horizon, thus making it difficult to fully consider foresight outputs in practice (van der Steen and van Twist, 2013). This gap or disconnect may hinder the development of a culture of foresight as a practice at all levels of the organisation.
- **Scepticism and resistance:** unlike more traditional types of evidence used in policymaking, such as surveys or modelling studies, foresight exercises actively embrace uncertainty as a mechanism to broaden the policy horizon. This, however, makes it also more difficult to use due to the **uncertainty avoidance** that characterises different national cultures to varying degrees (Andersen and Rasmussen 2014; Cook *et al.* 2014). As a result, policymakers might be reluctant in fully using outputs to inform plans and strategies (Bezold 2010). However, scholars have challenged the idea that there should be a **hierarchy of evidence** for policymaking, focusing instead on judging evidence based on its own merits and on how appropriately it can answer a policy question (Parkhurst and Abeysinghe 2016; Head 2010).
- **Scarce resources and futures literacy gaps:** conducting robust and appropriate foresight exercises requires time, resources, and the development of so-called futures literacy in organisations. Especially in the context of scarce resources, these can constitute the main structural and organisational barriers and may cause foresight applications in governments to be sporadic and not systematic. Low levels of futures literacy and poor understanding of the purposes and limitations of foresight can also bring about scepticism among participants and a lack of ownership of the foresight outputs (Bezold, 2010), which are then likely to remain ineffective. If scenarios are too abstract and lack concrete details, some people might not want to engage with them (Bezold, 2010). Scenarios can also fail to engage and promote change if the pool of participants is too narrow and not inclusive enough (Totin *et al.*, 2018). Researchers looking at strengthening participatory foresight suggested that inviting stakeholders to take part in occasional activities is not enough; rather foresight should be conducted 'on-sight' and as part of day-to-day activities if the aim is to develop futures awareness and literacy (Saritas, Burmaoglu and Ozdemir, 2022). In line with this, Nalau and Cobb (2022) called for increased attention to issues of co-production and equal representation in foresight exercises. In their review of 62 case studies

of future visioning approaches for climate change adaptation, they found that most of them did not harness participants' feedback. This instead would help practitioners understand the extent to which these exercises shift people's mindset, as well as providing valuable insights into mechanisms for increased inclusivity to support empowerment of participants, and thus ownership.

- **Foresight evaluation:** evaluation of foresight practices is one of the challenging areas for practitioners and researchers alike. There is a plethora of methods and tools, and yet organisations often fall short in effectively communicating outputs and implications of foresight exercises, as well as how they have contributed to decision-making (Bezold, 2010). Identifying what should be part of evaluation is not straightforward. One reason for this is that foresight outcomes have multiple layers (Calof and Smith, 2012; Johnston, 2012; Rohrbeck, 2012; Hines, 2016). In their analysis of three comprehensive policy-oriented foresight projects conducted by the Flemish Government, Fobé and Brans (2013) identify different types of influence that foresight can have on policymaking: direct, conceptual, agenda-setting, political-strategic, and process related influence. The three foresight projects had, respectively, a Technology and Innovation focus, an Environmental Outlook to 2030 focus, and a Nature Outlook to 2030 focus. Although these cases cannot be considered as representative of all foresight exercises in governments, it is interesting to notice that only in one instance (Technology and Innovation) was it possible to identify a direct influence of foresight, where the strategic goals that emerged from the exercise were implemented in strategic policy documents, albeit this was achieved gradually over time. In the other two cases, the researchers detected mostly agenda-setting, conceptual, political-strategic, and process-related influence. In other words, foresight was used to emphasise strategic needs; generate new insights into the shortcomings of current policies; engage ministers in parliament on the specific issues; establish a commitment to engage in further studies. Demonstrating foresight's direct influence is very challenging; nonetheless as the example outlined above suggests, other types of influence should not be underestimated. Adopting a broader definition of the influence of foresight would depict a more accurate picture (Fobé and Brans, 2013). This is corroborated by the OECD, which stresses that: 'the lasting impact of a foresight intervention is not only in the publication itself, but particularly in the changed ideas of those who participated' (2019, p. 10).

Figure 2 represents a thematic mapping of the challenges highlighted above, which are not mutually exclusive and can co-occur simultaneously, possibly in a reinforcing circle. The next section provides an overview based on available academic and grey literature of different examples of foresight functions in governments and of the identified critical success factors. These factors, however, should not be generalised without a critical consideration of countries' context-specific circumstances, (including cultural, economic, institutional, political, etc.).

Figure 2: Thematic map of foresight expectations and challenges (source: author, based on literature review)



2.3 Developing and embedding foresight in governments

Many countries set up foresight functions and in so doing have followed different approaches: these can be more centralised, with a dedicated foresight unit that leads and coordinates all foresight functions; or follow a more dispersed and network-based approach across governments departments (Georghiou and Keenan, 2006; Pouru-Mikkola *et al.*, 2023). There are publicly available benchmarking and comparative studies of how governments have approached foresight from an organisational perspective (GO-Science, 2021a; Prítyi, Docherty and Lavery, 2021). For instance, the UK GO-Science team commissioned a study that, based on insights from a selection of case studies (Finland, United Arab Emirates, Malaysia, New Zealand, Canada, the Netherlands, the USA, and Singapore), developed a framework for foresight functions (GO-Science, 2021a). The report suggests that there is a growing interest in strategic foresight but that much more needs to be done to integrate it as a practice into policymaking. To create a supportive ecosystem, governments need to: promote a future-regarding organisational culture; put in place the right structures (e.g. central foresight units or groups); invest in the development of in-house foresight skills; integrate foresight by following a multitude of processes, e.g. by set piece projects or by drawing on multiple methods to drive long-term thinking.

Similarly, the OECD (2019, p. 5) identify the key elements that enable a foresight system in governments: demand; capacity; institutions; embeddedness; feedback. Governments have adopted different mechanisms to achieve this, including establishing explicit legislative and political commitments to future generations; establishing future-regarding parliamentary committees (e.g. the Finnish Parliamentary Committee on the Future); creating central foresight units (e.g. Policy Horizons in Canada), which the OECD deems to be crucial to conduct strategic foresight; engaging with foresight expert groups and networks; and developing a system for feedback and learning. The OECD analysis of cross-cutting lessons are in line with the academic literature; in particular: the need to secure support from senior decision-makers; the importance of focussing on inclusivity and participation to broaden the evidence base for foresight exercises and increase their legitimacy and efficacy; the importance of adequately resourcing foresight function and providing training; the need to evaluate foresight exercises and communicate its outputs timely and through relevant channels are all considered key mechanisms to achieve institutionalisation of strategic foresight in governments (Prítyi, Docherty and Lavery, 2021).

Furthermore, governments need to consider their purposes and the specificities of national contexts and political traditions (Keenan and Popper, 2008). While this makes it difficult to compare models, there have been attempts to produce tools to help governments with advancing their foresight ecosystems. Janzwood and Piereder (2019) proposed a framework to assess the maturity of foresight functions in the public sector. They consider that less mature foresight programmes focus on outputs (e.g. foresight reports) that remain disconnected from the policy cycle, while more mature programs see foresight as contributing to all stages of the policy cycle, from formulation to evaluation. The latter approach, they argue, requires a deeper and more fundamental technical, structural, and cultural change that managers need to pursue. In the context of Wales, the Future Generations Commissioner for Wales published a **maturity matrix** which provides further details on what acting for the long-term means in practice. This tool identifies key elements underpinning long-term (clear vision of the desired future; easily usable future tools; appropriate resourcing; tools to embed futures consideration in decision-making), and the steps that organisations can take to develop more advanced functions.

These frameworks or maturity matrices indicate that developing foresight is a progressive journey involving a combination of structural and organisational interventions (e.g. setting up a dedicated unit, or training programmes) and a cultural shift towards long-term thinking (De Vito and Radaelli, 2023).

3 Methodology

Main takeaways

- The inception phase was dedicated to research co-design, which included developing a statement of the problem to be tackled; breaking down the challenge into smaller components; and developing an understanding of local context.
- The delivery phase focussed on data gathering, which included both secondary data (desk-based research) and primary data (interviews, policy pilots, stakeholder workshops).
- Thirty-five interviews provided an overview of challenges and opportunities of using foresight for strategic planning and for policymaking, as well as insights into different foresight models.
- Interview participants included civil servants and foresight practitioners in Wales and in the UK, as well as from other European countries and international organisations.
- Three foresight policy pilots provided a bottom-up, granular perspective on what foresight could look like in the context of Welsh Government policymaking, as well as on the role that foresight can play in strengthening the delivery of the WFGA.
- Two final stakeholder workshops were designed to critically review and discuss the available evidence, identify a vision for successful development of futures and foresight in Wales and explore enabling mechanisms that could be effective in the Welsh Government's context.

Figure 3: Overview of the research process and related activities (source: author).

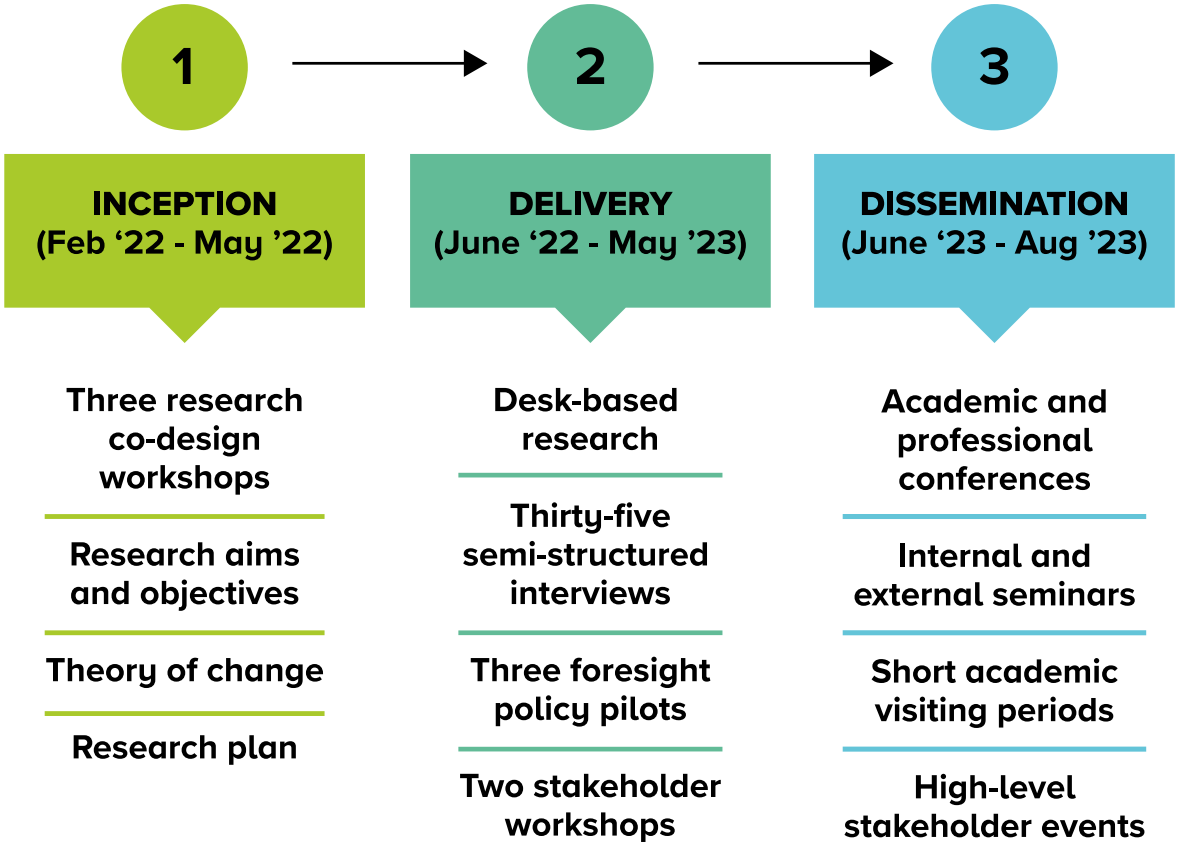
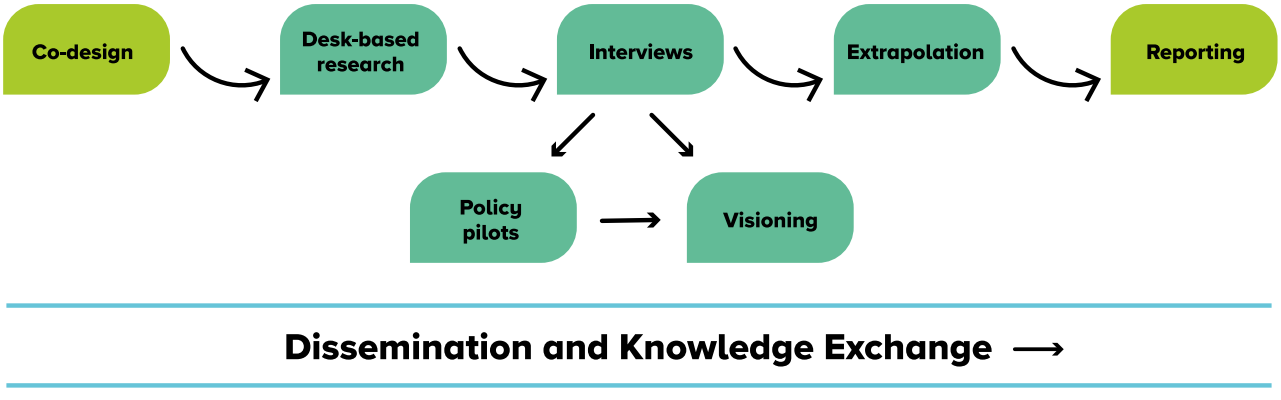


Figure 4: Outline of the overall methodological approach in a flowchart (source: author).



3.1 Research approach

The Fellowship had three phases: the inception phase focussed on research co-design (February to May 2022); the delivery phase focussed on research activities (June 2022 – May 2023); and the dissemination phase focussed on communication and knowledge exchange (June 2023 – August 2023)[11]. Figure 3 provides an overview of the research process with the key research activities related to each phase of the fellowship.

The following sections describe the research activities carried out during the inception and delivery phases in more detail.

3.2 Inception

During the inception phase (February to May 2022) the research aims, objectives and methodology were developed with members of the Welsh Government Sustainable Futures Division. Three co-design workshops[12] enabled a deeper understanding of the problem statement through breaking it down into individual components[13]. The workshops focussed on the following elements:

- **Workshop 1 – Problem statement:** participants were asked to reflect on key aspects that characterised the challenge that they wanted to tackle. This was a structured conversation using the following questions: What is the problem that needs to be solved? What are the challenging aspects of this problem? What will be different when the problem is solved? What are the complex and complicated aspects of the projects? The output was a clear problem and research outcome statement.
- **Workshop 2 – Contextualising the challenge:** this session developed a deeper understanding of the problem through employing the ISM model (Darnton and Horne, 2013). This model helped to break down the key challenge into individual, social, and material components to better situate the problem within the broader context. Subsequently, participants co-created a high-level stakeholder map to support the researcher in identifying target groups, potential research participants and key stakeholders that could be identified as key delivery partners.
- **Workshop 3 – Risk and evaluation plan:** participants reviewed the draft project plan and identified key risks that may be encountered during the delivery phase and discussed potential mitigation measures.

The outputs from the three co-designed workshops informed the co-production of research aims, objectives and data gathering activities. A Theory of Change was developed and used as an internal supporting tool to logically link each research activity to the research objectives and to enhance internal research validity.

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[11] The three phases had different work-patterns: the delivery phase had a 12-month full-time allocation, the inception and dissemination phase both had a 1 day a week allocation.

[12] The three co-design workshops followed an adapted and tailored co-design approach proposed by the Local Government Association in their Net Zero Innovation Programme 2021.

[13] Co-design workshops were held online using Microsoft Whiteboard as a digital tool for collaboration.

3.3 Delivery

The delivery phase (June 2022 – May 2023) focussed on desk-based research and a review of the literature, primary data gathering through interviews and pilots, co-production of a visioning workshop and an extrapolation workshop. Data were anonymised, coded, and analysed using qualitative content analysis (Aberbach and Rockman, 2002; Bryman, 2016). The coding framework was derived from the academic and grey literature and focussed on emerging issues including: organisational and institutional approaches; internal and external collaborations; benefits and barriers to futures and foresight; futures literacy and policy capability; futures and foresight for sustainability and well-being; long-term decision-making in the Welsh context; futures and foresight in a context of crises. Data from multiple sources were triangulated to ensure validity and reliability of the research findings (Denzin, 1978; Jick, 1979).

3.3.1 Secondary data

Desk-based research established the research baseline, which underpinned primary data gathering activities. I interrogated theoretical and empirical academic peer-reviewed articles on definitions of futures and foresight; applications of foresight in public policy and governments' organisational settings; effective use of foresight for decision-makers and evaluation. This review included cases of foresight exercises carried out by academics and policymakers in areas related to sustainability which could provide insights on the mechanisms that enabled (or hindered) successful applications and learning. Academic papers were integrated with publicly available documents from international organisations that feature prominent futures and foresight programmes, including the OECD, UNDP, UNESCO, European Union institutions, and national governments' foresight units such as the UK Government Office for Science (GO-Science).

3.3.2 Primary data

Primary data were gathered to complement secondary data and gain detailed and tailored insights into international experiences and into the Welsh Government context.

Interviews

A total of thirty-five interviews followed a semi-structured and guided conversation approach with key informants (Goldstein, 2002; Harvey, 2011). Potential participants were identified based on their job titles and positions within their organisations and the initial list was extended through snowballing/ chain-referral sampling technique (Parker, Scott and Geddes, 2019).

The selection process included both Wales-based (N = 16, 12 of which Welsh Government civil servants), UK and international experts, with a specific focus on participants working in government departments with a foresight remit or in dedicated central foresight units (N = 19). Professionals in public and third sector organisations that work closely with the Welsh Government on the Sustainability agenda and the delivery of the WFGA were selected for interview, for example from organisations such as the office of the Future Generations Commissioner, Natural Resources Wales, and Public Health Wales.

The approach of selecting participants outside of Wales was discussed internally and participants were purposely selected from different European countries to capture diverse models and experiences (e.g. Portugal, Finland), as well as sub-national governments (Flanders) and international organisations, such as the OECD and the UNDP. Data from these interviews were used to draw out common opportunities and challenges[14], and to identify cross-cutting themes and lessons that could be relevant for the Welsh Government. In addition, three foresight professional practitioners and one academic with longstanding experience of working with UK national and local governments were also interviewed.

Interviews were anonymised (see Appendix 2 for anonymised list of participants), coded using the software MAXQDA Plus (18.2.0) and analysed through qualitative content analysis (Bryman, 2016). Initial codes were identified through the literature review and document analysis and subsequently refined based on the insights coming through the empirical data (Clarke, Braun and Hayfield, 2015; Terry *et al.*, 2017; Braun, Clarke and Hayfield, 2022). Triangulation between primary and secondary data was used to ensure validity and reliability of results (Jick, 1979; Denzin, 2012).

Foresight policy pilots

Three policy teams in the Welsh Government were approached to conduct foresight exercises on current policy projects. These pilots complemented the evidence from the interviews with fine-grained bottom-up evidence of applied foresight. The teams were selected in consultation with the Welsh Government Sustainable Futures Division and discussed with senior leaders before approaching the teams for an introductory session. These were:

- an *ad-hoc* team in the Education Department working on the reform of the school year (2-3 participants);
- members of the Transport Department working on the reform of the bus franchise (6-7 participants;
- members of the Air Quality Team working on new air quality targets and monitoring as part of the Clean Air (Wales) Bill (10-11 participants).

The central sessions of two of the three pilots were conducted fully in-person, the third one in hybrid form. The three pilots followed a common structure centred on scenario planning (Miles, Saritas and Sokolov, 2016) but a flexible approach to tool selection allowed teams to tweak and adapt the structure to better meet specific priorities and outcome expectations. The sessions were organised as follows:

- **Session 1 – Outcome mapping:** one-hour online session designed to explore the policy landscape and understand the chosen topic in the context of the policy or legislative cycles; elicit expected outcomes; and identify the preferred scenario approach.
- **Session 2 – Diagnostic phase:** three-hour session to explore the topic from a long-term perspective through the following foresight activities: futures wheel; future-regarding stakeholder mapping; critical review of the Future Trends Report Wales; drafting scenarios with the support of PESTLE categories.

[14] For comparative overviews on governments' approaches to futures and foresight, see e.g. (Georghiou, 2008; OECD, 2019; GO-Science, 2021a)

- **Session 3 – Action planning:** three-hour session to draw out a roadmap and identify priority actions through the following foresight activities: critical appraisals of the narrative scenarios with discussion of underlying drivers; drafting of a well-being statement to identify the links between the individual policy and the well-being goals; action matrix (feasibility/ impact) and prioritisation; action roadmapping.
- **Session 4 – Debriefing session and evaluation:** one-hour online session to provide feedback on the session; reflect on the key take-away from the sessions; reflect on the benefits and difficulties of conducting foresight activities for policymaking; and on the barriers and opportunities for developing policy teams' futures literacy and increasing foresight applications.

Stakeholder workshops

Two final workshops, one of which involving external stakeholders (visioning) and the other one Welsh Government civil servants (extrapolation), allowed a deeper exploration of the critical questions that underpinned this research:

a) what role can/should futures and foresight play in delivering the Well-being of Future Generations Act?

b) how can we strengthen current futures and foresight architecture and mechanisms?

Visioning workshop

A visioning workshop involved nine external stakeholders from public and social sector bodies in Wales with roles or expertise in futures and foresight. Participants gathered ideas and identified opportunities for how futures and foresight can support long-term decision-making and policy implementation in a time of uncertainty for the delivery of the WFGA. The aims of the workshop included:

- to critically review and discuss international models and evidence to identify mechanisms that could work in the Welsh context;
- to co-develop a vision of what futures and foresight could look like in Wales;
- to explore what the current reality is and what needs to be done to deliver success.

Two techniques were employed: the Futures Triangle and a future-regarding systems mapping activity. The first technique allowed participants to consider the key drivers for a successful foresight ecosystem in Wales; the second was used to help articulate and draw out a map of existing and perspective relationships between institutions and actors that would strengthen the application of futures and foresight in Wales.

Extrapolation workshop

A final workshop involving c.20 Welsh Government civil servants reviewed the emerging evidence, identified barriers and enablers, and discussed the next steps to develop a Welsh Government strategy on futures and foresight. The aims of the workshop included:

- to take stock of the evidence available and identify mechanisms that could be translated within the Welsh Government context;
- to co-develop a vision of what strategic foresight within the Welsh Government could look like;
- to discuss opportunities and next steps for the development of capacity and capabilities for futures and foresight within the Welsh Government.

The workshop applied an extrapolation approach with 'hard questions' guiding the final discussion (Radaelli and Meuwese, 2010). This approach emphasises a deeper understanding of the underlying logic behind successful cases and of core mechanisms (e.g. organisational, behavioural, environmental, etc.) from which it is possible to learn and facilitate translation into different contexts (Bardach, 2004; Barzelay, 2007). Key actions were then identified and prioritised according to their feasibility and impact.

Chapter 4 presents the findings in two parts: insights from international cases and experiences are discussed, followed by the analysis of foresight within the Welsh Government.

4 Research findings: insights from international cases and experiences

Main takeaways

- Approaches to foresight in Portugal, Finland, the UK, and Flanders were analysed to draw out common themes. These governments use foresight in decision-making, albeit in different ways. This report does not present a comparison between approaches but rather identifies learning from all cases that can support the development of foresight in Welsh Government.
- Foresight functions and their organisational settings vary based on countries' priorities, public administration traditions, organisational cultures and needs. In all cases capacity to support projects and build capabilities across government and beyond is often a challenge.
- Application of foresight tools alone will not be enough to deliver a systemic shift towards long-term and anticipatory interventions. A focus on developing actions and applying lessons learned from foresight tools such as scenarios is important.
- Demand for foresight work can increase in a poly- or perma-crisis context and having a team with protected time to do this can ensure capacity for this is not eroded by the demands associated with responding to an emergency.
- Building senior leader buy-in is an important part of overcoming scepticism and resistance. International organisations such as the OECD can legitimise the work and increase its perceived value and status.
- Engagement of political actors is often less strong than in the civil service. Approaches that create shared responsibilities and align with policy areas can help to strengthen political engagement.
- Foresight can support institutional learning and create opportunities for regional and international collaboration.
- It is crucial that foresight follows inclusivity principles to make sure that people who are heavily involved, or who are likely to be significantly affected by the issue have an opportunity to participate.

4.1 Describing the cases

The four governments considered in this research (Portugal, Finland, UK and Flanders) have dedicated foresight units working across government and often with wider public administration bodies or international organisations to strengthen futures work (albeit in different ways). They all present comparable functions, but often with different areas of focus and approaches. Short descriptions of each case are provided as context below.

Portugal

Units and structures: The Centre for Planning, Policy and Foresight Competence of Public Administration (PlanAPP) (set up in 2021) is a central strategic foresight unit. PlanAPP sits under the Ministry of the Presidency.

History and governance of foresight work: Portugal have some tradition in the twentieth Century in creating mechanisms for coordinating high-profile initiatives and government strategies to driving long-term thinking and strategic integration in policymaking, although there was a cut short with the extinction of the Department of Planning Foresight (DPP in Portuguese) in 2012 (P11). A Legislative Decree 21/2021[15] requires PlanAPP to coordinate an inter-ministerial network (RePLAN) to improve collaboration, knowledge and resources in relation to foresight.

Focus and approach: PlanAPP has a remit to strengthen policy processes including policy planning, implementation, and evaluation, and to increase coordination between cross-cutting planning and public policy initiatives. PlanAPP directly contributes to strategic documents, such as the Major Options (Grandes Opções), which set out strategic economic and social planning, and key political strategies. PlanAPP also lead training courses and knowledge exchange activities focused on shifting the focus from foresight outputs to actions and widening foresight use across other public administrations beyond the central government.

Finland

Units and structures: There is a central foresight team and foresight work is also carried out within several government departments. Coordination of activities is led by the foresight unit in the Prime Minister's Office.

History and governance of foresight work: Foresight functions are well established and are central in informing national strategies with long-term insights and future-regarding considerations connected to SD strategies. The Government has a duty to report on progress every year to Parliament and Parliament is required to be actively involved in futures work through a Parliamentary Committee.

Focus and approach: There is a joint foresight group in which all ministries participate and who jointly produce the Government Report on the Future. In its latest iteration, the first part of the report outlines scenarios and issues that are likely to affect Finland, while the second part gathered views from different experts and stakeholders in Finland through methods such as cross-impact and consistency analysis to identify risks and opportunities as well as set of actions that were considered to be non-negotiable priorities.

[15] Decreto-Lei n.º 21/2021, de 15 de março, Aprova a orgânica do Centro de Competências de Planeamento, de Políticas e de Prospetiva da Administração Pública, Presidência do Conselho de Ministros. Diário da República n.º 51/2021, Série I de 2021-03-15, páginas 24 – 33. Available at: www.diariodarepublica.pt/dr/detalhe/decreto-lei/21-2021-159432384 [last access 18/07/2023].

UK Government

Units and structures: Within the UK Government, the Government Office for Science (GO-Science) hosts the Futures and Foresight teams. These have different remits, but both report to the Government Chief Scientific Adviser, who is a civil servant, rather than a minister or elected politician. The two teams work closely together and the two functions are integrated and complementary.

History and governance of foresight work: The GO-Science Office was formed in 2007 following the alignment of functions from the Office of Science and Innovation, the Department of Trade and Industry and functions relating to further and higher education and skills that had previously been part of the Department for Education and Skills. GO-Science advises the Prime Minister and members of Cabinet with a remit to ensure that policies and decisions are informed by the best scientific evidence and strategic long-term thinking.

Focus and approach: The GO-Science Futures team's main focus is to support teams across central government and the wider public sector to use futures methods and approaches in their daily work through, for example, training, toolkits, resources, networks and advice. Their support extends to Devolved Administrations and local authorities as well. In this regard, it can be described as a cross-governmental futures literacy and capability team. The Foresight team has a more applied focus and is about leading foresight projects on cross-cutting and cross-departmental issues. The Foresight team's analysis and reporting is often tailored to specific issues or policy areas, and these priorities are agreed through collaboration across government.

Flanders

Units and structures: Like Wales, the Flemish Government is a sub-national authority within the Belgian federal system. The foresight unit sits within the office of the Minister President of Flanders but also collaborates with other governmental experts including the federal government.

History and governance of foresight work: Foresight work is often on-demand, i.e., initiated by government department requests. This approach could be perceived as rather fragmented and highly localised within each department (P15). In 2020, alongside a government restructure, which combined the Chancellery and the Foreign Office, there was an opportunity to create a more systematic and visible central foresight unit which resulted in the creation of the in-house foresight team for this newly formed central department.

Focus and approach: The composition of the newly created unit has been growing in the past year, focusing on broadening the range of skills and expertise available to create an interdisciplinary team (e.g. biologists, historians, etc.). Its functions remain within the remit of the department, but provided that there is capacity, it also engages in collaborative projects with other departments. Foresight experts work closely with the European Commission and the Joint Research Centre (JRC) on cross-cutting issues, for example, in relation to the implementation of the European Economy Recovery Plan.

The overview of the case studies and interviews with international foresight experts point to some cross-cutting themes discussed in the following sections.

4.2 Institutionalising foresight through dedicated units, collaboration and capacity building

The academic literature stressed the context-dependent nature of foresight functions in governments. In line with this, participants presented different experiences and expressed various views regarding the best way to achieve institutionalisation, and, consequently regarding the role that foresight professionals should play in driving future-regarding actions and futures literacy (regardless of whether they were embedded in dedicated units or not). This can be summarised as: ensuring continuity of foresight functions; fostering cross-departmental and international collaborations; providing futures literacy training for capacity building.

Experts strongly stressed the benefits of creating dedicated foresight teams or units, albeit some warned that this approach could lead to a perception of foresight as a 'separate' or 'standalone' activity, rather than an embedded government function. As foresight is 'part of their DNA' (P11), foresight units are more resilient to organisational changes and ensures continuity in foresight skills:

> *'Politics is focussed on what is happening on a daily basis, and there are a lot of demands on governments. Therefore, it is important to have a dedicated team that has a focus on the long-term.' (P15)*

Furthermore, these units can create direct and indirect opportunities to engage with different government departments and can become catalysts for cross-government collaboration.

In Finland, the development of the Report for the Future led by the central foresight unit creates engagement opportunities across multiple governance layers within the government up to the ministerial level, meaning that the foresight work has directly influenced planning and strategic thinking in all ministries (P18; P19).

In the case of the Flanders, collaboration also extended to projects with neighbouring countries and regions, in recognition that current challenges are transboundary in nature. In 2021, a project with the Netherlands looking at the issue of digitalisation through a project which involved more than 100 participants, and multiple data collection methods (literature and desk-based research; academic and scientific on-request research; and a final workshop that brought all the stakeholders together in an open but structured dialogue). These collaborations have been described as valuable and insightful both in terms of organisational development and for fostering connection between science and policy.

In Portugal, there is a strong focus on integrating foresight within the policy planning, implementation, monitoring and evaluation stages. Foresight is seen as a mechanism to ensure coordination among different sectors and on cross-cutting issues through networking and knowledge exchange.

In the UK, the GO-Science team has the dual focus of providing training and resources (such as toolkits) through the Futures team, and conducting high-profile, applied foresight studies on cross-departmental issues through their Foresight team.

The capacity to deliver training or support departments was a challenge noted by participants. The UK's GO-Science Futures team have created a Futures Procurement Framework that gives them access to a range of pre-selected foresight practitioners and consultants which can help to address capacity issues. Participants from Flanders also described capacity issues and noted that it is more challenging to conduct foresight in smaller organisations where the capacity to address a multitude of topics is limited. For them, capacity was the main barrier to working on foresight projects with cities and local authorities (P16), with the consequence that work with these actors prioritises support for implementation of existing policies. However, there is an aspiration to scale up these projects and to make greater use of foresight, which should be enabled by early identification of topical issues where foresight could provide added value.

4.3 Foresight as a necessary but not sufficient condition to create anticipatory governance

As discussed in Chapter 2, governments face challenges characterised by uncertainty, complexity and long time spans. Against this poly- or perma-crisis background, participants agreed that anticipatory governance will constitute a key focus for governments worldwide, and that foresight will be instrumental in achieving this. However, this requires systemic understanding of organisational culture and context rather than simply using off-the-shelf solutions. The application of foresight tools alone will not be enough to deliver a systemic shift towards long-term and anticipatory interventions. As one participant highlighted:

> *'You can produce a fantastic foresight workshop, a fantastic scenario document, or identify the top 10 major trends, but you need to get into the granularity of how you're going to turn these insights into something meaningful and actionable for governments… you need to understand how to develop an emergent strategy and how strategy development works in each context… This is the greatest challenge.' [P17]*

According to participants, foresight experts should focus on articulating the relevance of long-term implications for present-day decision-making and focus on practical and concrete applications. For example, they can be effective knowledge brokers rather than domain experts, able to support ministers navigate the notable amount of information that they are exposed to, and help them to integrate long-term perspectives in policymaking:

> *'A dedicated team can conduct horizon scanning, pick up the signals of change, the opportunities, connect with experts, identify which stakeholders are of particular interest, and provide strategic insights beyond individual statistics.' (P15)*

As such, a dedicated foresight team can act as a catalyst for stakeholders and experts to come together and tackle a pressing challenge. However, it is also important to translate foresight insights and outputs into actions, and most participants recognised this as an area that needs careful and intentional consideration. One way to tackle this issue is to spend less time developing scenarios and dedicate more resources and activities to developing strategic dialogues or serious gaming to define practical pathways to apply the lessons learned foresight exercises (P16).

4.4 Foresight in the poly-crisis

Despite the added time and resource pressures, conducting foresight activities during crises was perceived as largely unproblematic and even beneficial **in principle** by participants, particularly as foresight enables a better understanding of how long-term trends and chronic risks intersect (P22). Some countries, like the UK, are working towards better integrating foresight and crisis management.

Participants explained that routine foresight activities are directly useful to mitigate the impact or likelihood of crises **before** they occur (in line with anticipatory governance expectations), and indeed one participant explained that, in their experience, it can be easier to frame foresight as a risk mitigation measure, as it's a type of language widely understood by government officials (P17).

The role of foresight **during** crises is more subtle and challenging to articulate, and the idea of continuing foresight work when short-term immediate responses are required is **prima facie** counter-intuitive. Participants agreed that in these circumstances, foresight risks being put aside and de-prioritised, with an associated risk that it remains ignored or weakened even after the immediate crisis or emergency has been resolved. Most participants recognise that resources may need to be shifted from foresight to organising emergency responses but noted that in delivering these, having some experience in foresight work can be useful:

> *'When you need to put out a fire, you need to put out a fire, but it might be useful if you've already got pretty good basis to think about these things and maybe avoid knee-jerk response to that emergency.' (P6)*

Having a separate foresight unit helps ensure that there are skilled employees with a 'protected headspace' to think about long-term consequences and trends of crises responses (P22-23; P7; P15-16), as ministers or civil servants in other teams might not have the capacity to do so, particularly during a crisis. While this protected headspace is useful, participants stressed that foresight units could not be completely isolated and removed from the operational sphere: this would lead to foresight practitioners lacking an understanding of decisions that are made on a day-to-day basis (P18). To avoid this, in Finland, opportunities to maintain connections between operational and foresight teams were provided through the requirement to involve all 12 ministries in producing the Report on the Future. Each ministry was represented in a cross-governmental body by a nominated individual, supported by in-house civil servants. This also created a sense of ownership and practical engagement with this work.

Although participants noted challenges with maintaining a focus on foresight during emergency responses, some participants (P15-16) also pointed to the fact that in a poly-crisis context, the demand for foresight has been steadily increasing. In their experience, during periods of heightened uncertainty, foresight becomes less marginal, regardless of the specific issues at stake.

4.5 Overcoming scepticism and resistance

Participants acknowledged that the uptake of foresight as a practice often encounters scepticism and resistance. Resistance can arise because foresight methods encourage participants to approach issues in novel ways that might challenge business as usual. There could also be resistance if foresight approaches are perceived to challenge accepted organisational narratives. For example, senior decision-makers may claim that anticipatory decisions are taken regularly in their organisation, even though the extent to which these are reflected in individual policies remains unclear (P17). A lack of buy-in from senior leaders is a significant challenge for the effective embedding of *Foresight,* and indeed they are typically seen as key stakeholders for enabling foresight work (P1).

Participants reflected on how to overcome these issues. For example, in the Finnish case, the active engagement of senior representatives from all ministries in a cross-governmental committee in a way that was both strategic and still action-oriented facilitated ownership and buy-in (P18). Participants also described how engaging with international organisations, such as the OECD, can raise the relevance and legitimacy of foresight exercises and consolidate support for projects that aim to increase futures literacy. For example, the Portuguese PlanAPP's collaboration with the OECD involved, in the foresight field, joint work with the Observatory for Public Policy Innovation (OECD-OPSI) to identify actions that could address a foresight-policy gap. The involvement of senior leaders in this work was critical, and the project produced tangible outputs focused on strengthening the links between foresight and policy across government. In June 2022, a collaborative session brought together sixty stakeholders from twenty-six public sector organisations to discuss different approaches to creating a futures-regarding public administration. They explored challenges related to the disconnect between foresight and policy; creating an effective foresight ecosystem; and institutionalising foresight across all government functions (Dal Borgo and Monteiro, 2022). During the session, participants identified an opportunity for central government units to act as a liaison point or facilitator to enable foresight and co-creation in the broader public sector and Portuguese society, strengthening the impact foresight outputs can have on policies and societal outcomes.

Finally, clearly articulating the contribution of foresight is also crucial. Instead, often there is a lack of follow-up to ensure integration of outputs within strategies, plans and actions. Tackling this challenge was one of the focuses of PlanAPP's collaborative project with the OECD Observatory for Public Policy Innovation (OECD-OPSI).

4.6 Developing futures literacy

The need to develop futures literacy beyond specialist units and widely across policy teams was discussed by participants. **Learning by doing** was the preferred and most effective method to help expand foresight capabilities (e.g. P15, P16), while developing and retaining in-house capabilities, thus increasing the overall institutional foresight capacity. Central foresight units such as the OECD unit have recognised that there is often a lack of capacity to develop literacies within governments and intentionally use their resources to address this through practical learning opportunities that combine their knowledge and skills with local and contextual understanding.

'We provide research and facilitation capacity and rely on local partners to provide us with knowledge about the local context of their organisation, and their understanding of the issues. In doing so, we provide a learning by doing model so that after they go through that process, they have tools available to them to keep running more of their own exercises and spin-offs.' (P7)

In the UK, the GO-Science Futures team provides training and resources (e.g. the Futures toolkit), and supports government departments to build capability in-house. The team also runs a network programme called Heads of Horizon Scanning Network that aims to encourage evidence and knowledge sharing, as well as facilitate opportunities for collaboration through a regular and systematic platform. Examples of training resources include introductory courses and in-depth masterclasses through online platforms, one-day policy capability training, as well as more specific training on how to implement some futures tool and methods.

However, futures literacy needs to go beyond knowledge of tools and methods: it includes innovative and imaginative thinking skills that enable discovery and an agile approach to drawing together information from a wide range of sources to broaden the set of choices that can be considered. Indeed, futures literacy alone will not be enough to embed foresight as an organisational practice if it is not also accompanied by more systemic changes to ways of working within the organisation[16]. This notwithstanding, futures literacy is a precursor to the correct and robust application of foresight methods.

Furthermore, reception of foresight work in the media has been raised as important by some participants (P1; P19), particularly regarding the need to understand that scenarios are tools to increase preparedness rather than predictions or documents outlining governments' plans for action. In light of this, futures literacy should extend beyond the civil service and include the broader society, e.g. by being integrated as a core skill in the school curriculum (P19), thus becoming a tool for open public conversations, collaboration and co-creation.

4.7 Foresight and the political level

Engagement with the political level emerged as an area where professionals and civil servants involved in foresight saw most room for improvement. Participants recognised the importance of securing buy-in and active engagement from elected representatives (members of parliament or members of government). One participant described how talk about value and societal goals is often more complex, contested and less straightforward in governments than in private sector organisations (P17). In the civil service, decisions are often underpinned by values and ideas about what successful government policy is. It is therefore important to surface and tackle these value questions through increasing reflexive capacity across governments, including at the political level.

[16] This is reminiscent of the debunking of the information-deficit model which suggested that behaviours can be changed due to increasing information from experts. This overly simplistic model inaccurately characterises the relationship between knowledge, beliefs and action and ignores wider contextual factors that affect both actions and beliefs.

Some of the reasons that make this challenging are:

- governments' political commitments are influenced by short-term electoral cycles, and political parties and individual officials are not incentivised to think in longer time frames;
- the language used in more creative, open, and co-produced projects may not fit the image of politicians and civil servants as rational actors that do not sway from reality and 'facts'. As a consequence, the emotional sphere is often neglected or minimised;
- a significant challenge arises when departments work in silos, a situation that is known in the academic literature as departmentalism. Failure to recognise and act upon the cross-sectoral and horizontal nature of many of today's problems undermines effective foresight practices and is a missed opportunity for shared learning. Departments can learn from each other about foresight practices, especially where there are different levels of futures literacy and application (e.g. Transport departments were often mentioned as more likely to engage with foresight functions due to the long-term nature of the infrastructural investments required in that government area).

Specialist foresight units within the OECD and also the GO-Science foresight team work horizontally and on topics that are framed as cross-departmental issues to address this challenge explicitly. These often encompass long-term (20 to 50 years) technological and societal problems, which then become the central theme of the foresight team's analysis and reporting. The GO-Science foresight team takes the lead on shortlisting potential issues that have a genuine cross-departmental nature and discusses them with different government departments and the chief standard advisors to decide the priority issue. For instance, the 2023 GO-Science Net Zero Society: scenarios and pathways report builds on a broad evidence based (gathered through a mix of desk-based research and primary research) to develop four scenarios, which then are quantified.

In Portugal, the inter-ministerial network RePLAN fosters collaboration, knowledge and resource sharing in areas of strategic planning, public policy and foresight, with the view to overcome silos, encouraging adoption of piecemeal and ad hoc strategies, and thus also avoiding duplication. This network is already at work, and its foresight team of several entities of the Portuguese administration is developing a megatrends study, a glossary, a series of seminaries and other tools to foster the use of foresight across the Portuguese Administration.

4.8 Foresight as a mechanism for knowledge exchange and institutional learning

Foresight can underpin knowledge exchange and institutional learning but in order to do so it needs to be open and centred around collective intelligence. The example of Finland shows how the foresight work for the preparation of the Report on the Future benefitted from the participation from all the ministries (P18; P19). Collective intelligence strengthened the quality of the foresight work by creating richer scenarios that considered a wider range of alternative options than otherwise would have been included. At the same time, participation and integration instilled a sense of ownership of foresight outputs, increased the ability

of participants to deal with and understand uncertainties, developed their preparedness to deal with wild cards/black swan events, and in turn raised the profile of futures work itself within the organisation. In Portugal, PlanAPP plays a central role for supporting foresight activities across government departments, promoting learning through an internal foresight network, as well as engaging in knowledge exchange with external organisations (such as academia, regional and local authorities) and international partners and organisations (P1). Finland's central foresight unit also coordinates a National Foresight Network and organises different activities (e.g. foresight Fridays, or bigger annual foresight events). In addition, Finland is a leading actor within the EU-wide Foresight network.

Participants stressed the value and the importance of engaging with external stakeholders, especially those from international contexts, such as equivalent departments in other countries or sub-national authorities (e.g. regions or devolved administrations) or international organisations such as the OECD, the World Bank, or the European Commission. Engagement with international partners was valued both in terms of knowledge exchange activities, and because of resulting collaborations on programmes and projects.

In international organisations, coordinating the activities within the international foresight community was seen as one of their primary tasks. For instance, the OECD has a strategic foresight unit that coordinates a network of foresight practitioners in governments where best practices and international experiences are shared and can be compared. The OECD unit also produces thematic reports and analyses that promote the use of future-regarding insights horizontally, and they directly engage with governments to develop long-term strategies (e.g. on net zero transitions) or to conduct major foresight projects. This approach stemmed from the recognition that governments either needed capacity support to conduct in-depth research on specific complex issues or needed specialist skills to coordinate and run large scale processes (P7). Alongside this, the OECD Observatory for Public Sector Innovation uses foresight as a major component for developing anticipatory capacities within governments.

Inclusive and participatory foresight

Foresight is a process that is essentially grounded in learning. It promotes the consideration of broader evidence bases and encourages the involvement of different stakeholders, who are able to directly contribute to building collective intelligence and also learn from others about a certain topic. Generally, foresight exercises start from a gathering of evidence and this knowledge base is then used in the anticipation phase. In this phase, foresight practitioners benefit from internal networks of domain experts who are able to provide specialist insights (P4; P5). It is crucial that this follows inclusivity principles to make sure that people who are heavily involved, or who are likely to be significantly affected by the issue have an opportunity to participate.

> *'It is important to meaningfully engage people as the interventions we're working on will have an impact on the world for generations. We need to go beyond our own perspective and create a forum where they feel not only that their voices are heard, because that's only stage one, but actually that they have control over the way the project is conducted and have active agency.' (P5)*

And, moreover:

> *'We are trying to broaden the conversation out and include underrepresented voices and really make a concerted effort to reach out and recruit beyond the typical people that would normally be involved in these sorts of projects.' (P4)*

This is also the ambition of Lab2050, the national participatory visioning project conducted in Portugal in liaison with PlanAPP activities. This engages a wide range of people from a variety of socio-economic and cultural backgrounds in a national debate on a desirable and sustainable nation for 2050. The project coordinators' ambition is to reach participants beyond traditional stakeholders and engage citizens to articulate local perspectives and co-create a vision for desirable futures for the country. Similarly, in the collaborative project that involved the Flemish Government and the Netherlands, creative and visual outputs were used to share findings in ways that would be more accessible than the core final report (P15). In Finland a structured citizen dialogue exercise, i.e. a series of conversations which followed the **Timeout method** held in public spaces (e.g. public libraries), allowed citizens to express their views and concerns about the future of the country. The content of these dialogues were integrated into the scenarios in the Report on the Future.

While broadening the range of stakeholders engaged is useful, practitioners need to be aware that the choice of foresight methods may also affect who is able to meaningfully engage. This is why, within Lab2050, facilitators are relying on a variety of different methods to promote public debate and deliberation. For instance, small group conversations may encourage people who are not used to public speaking, activities that involve drawing are being used because they are considered to be more flexible and less prescriptive than more traditional methods, and conversations are being intentionally kept open rather than presenting participants with a set of options to choose from (P26). It was expected that the process will continue to adapt as required, with themes being refined or narrowed in response to feedback from participants.

5 Research findings: insights from Wales

Main takeaways

- Participants agreed that the WFGA has increased the visibility and the relevance of *Foresight,* even in terms of language and expectations.
- The WFGA is a platform that can drive the development of a dynamic foresight ecosystem.
- The legal framework of the WFGA can become a platform for enhancing foresight work within the Welsh Government, as well as within the broader Welsh foresight ecosystem involving other public sector actors.
- Public and social sector organisations have strong in-house capabilities and skills in foresight and often work together collaboratively or through knowledge exchange.
- Within the Welsh Government, some departments, for example the Transport Department or the Strategic Unit within the Environment and Rural Affairs Department, have in-house capacity and capabilities to apply *Foresight,* but overall foresight practices across the Welsh Government are patchy and often conducted ad hoc rather than mainstreamed within the policy cycle.
- Interview data and the evaluation from the three policy pilots indicate that there is a strong demand for more foresight work and for more integration of futures thinking in policymaking.
- Tendencies to work in silos that follow departmental portfolios, scarcity of time, and futures literacy gaps, organisational mechanisms and disconnects with the political sphere were mentioned as key barriers.

5.1 Foresight within the Welsh Government legal and policy context and the Future Trends Report Wales (FTR)

As discussed in the introduction to this report, the policy context in Wales is profoundly influenced by the WFGA. The introduction of this legislation represented a step- change for the creation of a future-regarding culture in the public sector (P2; P8). As one participant stated: 'when we do foresight in Wales, we have to do it using the five ways of working and this put you in the right zone straight away' (P2). Within the Welsh Government, the Sustainable Futures Division has oversight over the implementation and delivery of the WFGA, as well as having responsibilities over foresight. Central to the activities of this division is the publication of a Future Trends Report Wales (FTR), as required by the WFGA itself.

To date, this is one of the key mechanisms to support long-term thinking and a better understanding of Wales today and potential future trajectories. In its second iteration, published in December 2021, the FTR consists of three documents: a narrative summary, an evidence pack, and an infographic that provides a succinct snapshot of the key trends. It is the result of a cross-government effort and the work of policy officials and analysts, and this is reflected in the structure of the report itself, which considers multiple trends together and includes granular and publicly available data on their impacts in Wales and, where possible, in Welsh regions. This stemmed from the recognition that civil servants, local authorities, and other public bodies expressed the need to 'dig down deeper into the data and use them in their own context' (P10). The FTR can be used as an evidence base to develop policies and to integrate long-term considerations into current thinking. Together with the expectation that long-term thinking underpins working practices, the FTR is a central tool to inform the application of foresight methodologies in strategies and policymaking alike.

However, the evidence suggests that foresight applications in the Welsh Government tend to be piecemeal and concentrated in certain departments. Embedding future-regarding practices will require a mix of programmes to tackle capability gaps, behaviour change interventions focussed on individual civil servants, and organisational mechanisms that facilitate and create a platform for foresight to be fully embedded in the policy cycle as a practice. The following sections focus on these themes.

5.2 Tackling capacity and capability gaps

Insufficient futures literacy is a significant gap to address in Welsh Government. In addition to the possibility to follow an online training programmes, such as the Futures Toolkit course that is part of the Learning & Development offer, there is scope to integrate futures literacy more broadly. Continuous learning and improvement programmes and programmes to improve policy capabilities in Welsh Government can become platforms to achieve this. The Policy Capability team sits within the Sustainable Futures Division. It has oversight of the policy knowledge, skills, and ways of working that are expected to be adopted by the Welsh Government civil service in their respective policy areas. The offer from the Policy Capability team goes beyond formal training opportunities, and focuses on other mechanisms, such as networks, communities of practice, thematic seminars, and policy champions. The mix between informal learning, formal training, and learning by doing is central to the policy capability work and aims at creating

a group of people (an 'internal faculty') that can lead on specific skills, regardless of their grade. This is felt to be an approach that can be fruitful for mainstreaming the use of foresight in different policy areas (P21). Conversations with several Welsh Government participants highlighted that it is often useful to distinguish between the skills that individual civil servants need to have to do well in their job and progress in their careers, and the skills that need to be available at the team level[17]. With regard to futures literacy, this means that it is not necessary for all members of a team to develop specialist foresight skills, but everyone should be able to actively exercise futures thinking and contribute to foresight exercises.

Policy champions can drive upskilling and encourage cultural shift and there is an opportunity to achieve this as two of them have a dedicated focus on long-term thinking as a policy skill. (P21; P29; P28).

5.2.1 Continuous learning drives improvement

The Welsh Government has an in-house research capacity and these teams can become active levers for mainstreaming foresight into policy teams' work. This can be achieved both indirectly, i.e., by using and referencing foresight work produced by other organisations (such as GO-Science), or by integrating foresight methodologies directly into research activities, as a way to support the delivery of the WFGA (P9). There is an opportunity to promote existing tools like the FTR, alongside conducting continuous evaluation and encourage learning, thus reinforcing confidence in foresight-informed decisions, even in a context of crisis, high uncertainty, or in the absence of historical evidence (P8; P13).

5.3 Embedding foresight through systems thinking and behaviour change

According to most participants, the main barrier to developing capabilities and engaging in futures literacy training is scarcity of time and resources, which hampers the ability to increase foresight capacity. Participants discussed feeling like policy teams are 'firefighting' and moving from crisis to crisis (P9; P10: P13). This reduces the space for foresight to be integrated into decision-making from the outset, often resulting in foresight work being applied in addition to what it has already been done, rather than as integral input (P10). There was agreement that foresight must be fully embedded into policy thinking and that while individual projects are useful, they are also more at risk of being sidelined or de-prioritised in a context of scarce resource (P8). Nonetheless, in a context where resources are constrained, progress is still achievable if the organisation provides the right institutional and individual incentives that enable civil servants to engage with these activities. This can be at the organisational level (e.g. openly valuing and rewarding foresight work within the organisation), or at the individual level (e.g. promoting foresight as a skill that improves civil servants' work and professional profile).

Data shows that there are substantial opportunities in the Welsh Government to embed foresight as a practice through mechanisms that are either already established or that are supported by key senior civil servants even though they still need to be applied systematically. Fundamental mechanisms identified through interviews with Welsh Government participants are **systems thinking** and **behaviour change methodologies**.

[17] It is worth noting that this offer is not link to performance management or Human Resources (HR) procedures.

5.3.1 Systems thinking

Systems thinking is recognised as a key lens to tackle societal challenges, and most participants identified a link between this approach and foresight (P2; P3; P13; P21; P30), even pointing out that it is not possible to do one without the other. Systems thinking complement foresight by highlighting the connections that help overcome existing silos. Conversely, foresight can add to systems thinking as well: 'when you do systems thinking, it's about that threat of the system and the interlinks but it lacks the depth of time, and I think the futures approach it gives just that, it's like an additional dimension' (P30).

Participants thought that integrating systems thinking and foresight enhances the interaction between participants from different backgrounds facing common challenges, who are therefore able to explore them from different perspectives, as well as establishing connections to other related topics and dimensions (e.g. nature, biodiversity, etc.). Systems thinking can also enhance foresight by encouraging the consideration of trends not directly linked to the specific issues but that could become relevant over time (P8). The synergy between systems thinking and foresight can go beyond the identification of problems and inform policy development, analysis, and evaluation as well. Participants highlighted that this would enhance long-term planning as well as crisis response.

However, **siloed working** is a critical barrier that can be overcome through new connections and relationships (P2; P3). While siloed working is perceived as being still common within the Welsh Government civil service, participants felt the WFGA is effective in challenging this:

'The WFG requires people to think about the context and systems. The futures work supports people in doing this, in understanding how different elements react and relate to each other. The WFG gives us a nice framework in which to frame the futures and systems work and the integrated assessment conducted at the end of the policy process can be strengthened by having asked the right questions through futures and systems thinking.' (P3)

5.3.2 Behaviour change

Behaviour change practices can shape how foresight activities are conducted within the organisation. Welsh Government programmes linked to the WFGA are an example of how this can be achieved. An example of initiative in response to the behavioural change needs is the Well-being of Future Generations Culture Change programme. This programme uses behaviour change methodologies aimed at embedding the values and the ways of working of the WFGA through experience. The programme pre-dates the WFGA and has always had a long-term view and integrated SD tools and concepts (e.g. planetary boundaries), and its ethos emphasised the importance of the emotional implications of engaging with futures work. Today, the programme focuses on the learning and behaviour change that can support civil servants in collaborating and coproduction across government silos. The programme focuses on practice-based change and the creation of communities of practice or peer-to-peer networks.

More broadly, this type of tailored support, which also includes coaching and mentoring networks, can be directed to adopting long-term thinking and using foresight methodology, beyond formal training opportunities. For example, the insights from the programme support the idea that, in order to be empowering, foresight should be action-based and consider multiple plausible and open futures. Furthermore, with its focus on values such as co-production, mindfulness, and kindness, the programme can strengthen the participatory element of foresight exercises from the outset and help participants engage both their rational and emotional sides (P2). The use of pauses, listening without commentary, and being explicit about the fact that foresight exercises can be challenging for the individual and the group, all practices that the programme puts forward, would enable better engagement and therefore better foresight outputs.

This programme can support the embedding of foresight as it can also shed some light on what tools and approaches may be perceived as useful and empowering or, conversely, damaging, superficial or naïve by participants. This is very important to consider in the context of the civil service, where values like objectivity, transparency, neutrality are criteria to which decision-making abide to.

5.4 Applying foresight within the Welsh Government policy cycle

5.4.1 Insights from the foresight policy pilots

There are several teams and departments in the Welsh Government that already apply foresight to policymaking. However, data suggests that while foresight is likely to be applied when developing high-level strategies and goals, this is limited to the very early stages of the policy cycle. The **three foresight policy pilots** with three Welsh Government teams (T1, T2 and T3) provide more granular insight into how teams can use foresight in policymaking in the Welsh Government context and their reflections on how to make this practice sustainable and fully embedded.

As explained in Chapter 3 – Methodology, the pilots aimed to test foresight applications with Welsh Government policy teams and reflect on the challenges and opportunities of fully embedding them in policymaking. The pilots revealed that there is a strong demand for more foresight activities across different departments and areas of government, regardless of how familiar participants were with individual foresight methods. Participants from T1 considered that this way of working should be done daily and weaved into their activities more systematically. While dedicating extended chunks of time to foresight was challenging, and a flexible approach was required to make sure that there was an appropriate balance between time commitments and expected benefits, these activities were perceived as efficient and even time saving. All three teams mentioned the presence of an external facilitator as helpful and conducive to creating space for participants to focus on the issues rather than on methods and activity schedules.

All three teams agreed that while foresight exercises are helpful even at a later stage of the policy cycle, conducting them early on allows consideration of a broader set of options, and ultimately results in better policies. Indeed, one participant from T1 noted that even when applied to a policy in an advanced stage, foresight allowed the team to deepen their understanding of available options, gain clarity over what policy success or failure could look like, as well as building capabilities during the exercise. Indeed, there was a suggestion that foresight exercises could be repeated at different stages, with different angles to explore and different levels of detail. In discussing the benefits and the challenges of foresight within the Welsh Government policymaking context, reflection from the pilots indicated that foresight brought about immediate benefits. It demonstrated that foresight can contribute to achieving all five ways of working, not only long-term.

- Strengthening **critical thinking** and enabling a different approach to prioritisation and analysis of issues. T1 explicitly described these exercises as a time-saving investment that would lead to better policies, whereas T2 and T3 discussed foresight exercises as a platform for big teams to come together and better join-up their work, primarily if the exercises are delivered face-to-face. The presence of a facilitator strengthened critical thinking and helped participants to look critically at initial assumptions (T3). In this sense, foresight helped individual participants to reflect on their role as civil servants in creating policies in the first place.
- Critically reassess the **role of stakeholders over time**, which can strengthen both involvement and collaboration. This was particularly highlighted as a benefit from T2, who was at the time conducting several stakeholder engagement activities.
- Being able to consider the **big picture** and understand where individual policy work sits in relation to other work in related areas and the well-being goals. All the teams claimed that the exercise clarified the rationale for introducing a policy change. T3 talked about the exercise as a stimulus for people to go outside their individual areas and a mechanism that helped to identify connections that were not being considered before. This would directly contribute to increasing integration as a way of working.
- Identification of **new (future-regarding) risks and opportunities**, which directly strengthen prevention and long-term. Participants reflected that foresight could be used to better understand the direct and, crucially, the indirect implications of interventions. T2 reflected that this can be achieved if foresight is front and centre of the policy analysis and can be used in risk and impact assessments and mitigation.

Throughout the pilots, the WFGA was used as a red thread linking individual activities and keeping the focus on shared values and goals.

Participants also reflected on the barriers to mainstreaming foresight.

- **Silos:** by their nature, pilots did not involve external stakeholders or members from other Welsh Government teams. Nonetheless, all participants considered the benefits of working across departments and claimed that this does not currently happen enough.

In fact, one participant from T3 reflected that during crises response (e.g. in the aftermath of Brexit or the COVID-19 pandemic), there was much more emphasis on cross-departmental group work, which gave civil servants a more strategic overview of the actions taken across the organisation, thus minimising the risk of duplication. In Wales, the WFGA, at least in theory, should push towards minimising fragmentation between government portfolios as it gives an overarching agenda that all departments work towards delivering.

- **Processes and systems:** participants pointed out that the policy cycle is part of a broader set of systems and processes, and these do not always favour foresight work. Participants referred to externally-determined timeframes to which policymakers need to align, the role of other professions in shaping policies (e.g. the legal professions) that would not typically be involved in foresight work for policymaking; as well as other bureaucratic steps that demand significant input and headspace from members of policy teams. In this regard, all teams referred to the risk that foresight is seen as an add-on rather than an embedded practice and reflected on the role of champions and senior leaders in ensuring this work is carried out systematically instead.
- Linked to the previous point, participants highlighted the current disconnect between applications of foresight in policymaking and the **political sphere.** Participants reflected that the need to deliver on the Programme for Government is central to everything they do, and foresight should be integral to very early strategic discussions aimed at identifying issues, problems and, eventually, policies (P10; P13; P21). This can influence the extent to which foresight can shape early stages of the policy cycle but also poses the question as to whether it is possible to engage the Senedd in foresight work and discussions as well.
- **Futures literacy:** participants pointed out that they would benefit from knowledge exchange and case studies that they could replicate or adapt to their specific needs and to different circumstances. They underlined the benefits of having an external facilitator that could act as a critical friend, interacting in a supportive but detached manner. Although participants recognised that there is not enough capacity within the Sustainable Futures Division to provide that type of direct support, increasing futures literacy in the organisation would help. One member of T1 suggested this could lead to the creation of a group of civil servants that can act as facilitators across different teams in the Welsh Government and that can be called on to support different policy areas outside of their own.

5.4.2 Challenges and opportunities for embedding foresight

The insights from the pilots resonate with what interview participants said about the challenges and opportunities for embedding foresight in the Welsh Government policy cycle.

Awareness: generally, in the view of participants that routinely use these tools, foresight is well received and perceived as useful across the Welsh Government (P3). While a broad range of techniques has been mentioned, from scenarios to more quantitative modelling and forecasting techniques, participants agreed that a lot of preliminary work needs to focus on collaboration and ensuring buy-in (P2; P3), and there are different ways in which this is achieved. For instance, consistency and familiarity with foresight tools help build buy-in. It is essential to build social capital from previous work – if civil servants and stakeholders already know and have engaged with scenario work, it is more likely that they will be willing to take

part again. This does not mean that innovation is discouraged by teams that currently use foresight, but facilitators need to strike the right balance between using something immediately recognisable and new techniques. It is also possible to integrate innovation practices to change previously used techniques, such as combining role playing in traditional scenario work to inform policy development (P3).

Alignment with specific strategies and goals: another critical element to consider when designing foresight exercises is ensuring that these are in line with the WG values and legal framework. This adds to the rationale for conducting foresight, and it can be a lever for support (P3; P8; P10). *Foresight,* especially if combined with systems thinking, can be challenging, and civil servants and policymakers may need help in navigating the complexities of the challenges that they face. In this sense, designing foresight exercises that are specific to the Welsh context helps participants to perceive foresight as something valuable and concrete, and pitched at the right level based on the specific team's aims and objectives. This approach can underpin all stages of foresight, including normative or explorative questions or visioning stages (e.g. 'what does success look like and what are we trying to achieve?' or 'how this trend will affect our policy landscape?'), but it is essential to be aware that there are some drawbacks. Context-specific considerations, for example, may lead to an analysis that is too inward-looking and does not consider the interconnections of the system with other countries or governance levels.

Foresight in a context of crisis: a concrete and context-specific focus might be difficult to maintain during crisis preparation: consideration of **black swans** or **wild cards**, even within scenario work, might end up being too abstract and high level (P3; P10). This can be the case even if risks are specific to Wales and localised. Therefore, while some broader risks may be hard to integrate in detailed policymaking, considering future risks that might impact Wales equates to ensuring the country is collectively as prepared as possible (P20). There is an opportunity in the Welsh Government to strengthen preparedness to impacts from, for example, climate change or sea level rise, but this is challenging when a lot of the work needs to be dedicated to immediate crises in a more responsive way. Participants recognised this as an area for further development and work (P20). One of the key barriers is the assumption that foresight and crisis response cannot happen simultaneously, whereas in the experience of some civil servants this was the case during, for example, the COVID-19 pandemic (P34). Interview data and feedback from the foresight policy pilots suggest that many synergies can help overcome silos and provide a rationale for prioritising actions (P34, T3). Like when dealing with crises, foresight benefits from a team of people that are able to look across the organisation and be effective (P34).

Organisational mechanisms: the pilots suggested that, in addition to futures literacy and behavioural practices and systems thinking, having built-in mechanisms that 'give permission' to people to conduct this type of work is key (P2; P8; P9).

Creating a culture that supports long-term thinking can be achieved through adequate resources but also the **right institutional signals from senior leaders and incentives**. For instance, one participant noted that if civil servants within research or policy teams are asked by their senior leaders 'How is foresight being considered in your work?', then it would become natural to embed it in the terms of references for research projects and build it into the scoping and

evaluation phases, as well as it becoming an integral part of the evidence underpinning policy planning (P9; P12).

In the UK Civil Service Competency Framework, seeing the bigger picture is included as a behaviour expected in civil servants. In line with this, there was the suggestion that the principles of the WFGA, including long-term thinking, can be more explicitly integrated in interview questions or annual performance reviews (P10; P34).

However, participants also flagged the risk of framing foresight as an additional task on top of other requirements, such as conducting integrated impact assessment, equality assessment, and other performance indicators (P8). Risk aversion and the need to ensure regulatory compliance can influence how long-term as a way of working is interpreted by civil servants on the ground.

> *'A linear number of cumulative tasks that suddenly feels like a lot to do or change if you're working in the public sector... so it's important to being able to see how it all fits together and works together in the broader context of the Well-being of Future Generations Act.' (P8)*

Furthermore, the high-profile role that the WFGA has in shaping actions in the WG had implications for how participants described the Sustainable Futures Division's role in driving the government's foresight agenda. With its oversight of the implementation of the WFGA and the delivery and publication of the FTR, the Division is seen as a reference point that can signpost teams to foresight resources and support the uptake of foresight as a practice. Participants did not express strong views in terms of what functions the Division should expressly undertake, and there was a recognition that while policy teams need to have a certain degree of in-house foresight skills, and that the civil service should be able to engage with this type of work, having a recognised central unit responsible for this portfolio can be helpful to increase the profile and visibility of foresight: 'things like foresight and system thinking don't make decision-making more straightforward, so you need a central government unit to help delivery teams' (P13).

Team composition is also an important factor, both in terms of having multiple disciplines and professional backgrounds involved and in terms of different roles:

> *'It is pointless doing foresight unless you have a delivery person next to you and an analyst and an economics person, a social scientist, a behavioural specialist...you can't just use simple tools and techniques and expect them to fix complicated problems. That's not how it works. Tools need follow up, evaluation, testing and iteration.' (P13)*

5.5 The role of the Welsh Government in the Welsh foresight ecosystem and beyond

Seen through the lens of the WFGA, the foresight ecosystem in Wales has the potential to become rich and diverse, encompassing and engaging many public and third sector actors. At the time of writing, the WFGA's well-being duties apply to the WG, twenty-two local authorities, seven local health boards, four corporate joint committees, three fire and rescue services, three national park authorities, eight national public bodies; alongside these, Public Service Boards have a collective duty to carry out

a well-being assessment and publish an annual local well-being plan. Organisations such as Public Health Wales, Natural Resources Wales, and the Office of the Future Generations Commissioner for Wales are proactively working on building this foresight ecosystem and have consistent messaging and focus, also thanks to the common reference to the WFGA (P7; P13; P14). In working to developing the futures and foresight ecosystem, the WG has strong opportunities for collaboration and knowledge exchange with key public sector organisations, which have in-house foresight skills and actively contribute to advancement of futures thinking within their organisations and beyond. Many of these bodies are part of an informal Futures Thinking Network that offers a platform for sharing experiences and practices, and it has been a useful platform for feedback and support to work initiated by the WG, including this research project.

There is still a significant gap to achieving a consistent and embedded use of foresight tools in many public sector organisations in Wales. The Futures Thinking network can contribute to both advocating for and advising about how and when to use these tools, and to increase diffuse capabilities by directly contributing to projects when appropriate and possible (P13). Participants in the workshop involving external stakeholders felt that the informal nature of this network was helpful in creating a supporting environment but that a more formal network could have a more direct role in this regard.

As a devolved government, the WG works within a multilevel governance system, which means that they have different levers than central national governments have access to. However, there is real opportunity in Wales to work collectively with other regional networks, and to some extent, this is already happening through participation in the Wellbeing Economy Governments' Network (WEGo) and through bilateral collaborations with other devolved governments that follow similar approaches, such as the Flemish Government (P34). Furthermore, participants in the visioning workshop that involved senior WG civil servants pointed out that it is also essential to work with other governance levels within Wales, such as local authorities.

6 Conclusions and key recommendations

Main takeaways

- Foresight enhances adaptive and anticipatory governance by integrating long-term perspectives and supporting policymakers in acknowledging and navigating uncertainty. It is important that governments consider inclusivity and participation when designing foresight exercises.
- Dedicated foresight units are considered helpful in ensuring continuity and sustainability of foresight functions but, to be transformative, foresight should be embedded as a practice in policymaking.
- Although there are examples of applications of foresight within the Welsh Government, foresight is not consistently embedded as a practice. Furthermore, the gap between foresight outputs and actions is a common challenge for governments.
- The Welsh Government has the potential to successfully mainstream foresight thanks to the platform offered by the WFGA, which promotes long-term thinking alongside sustainable development and well-being.
- Disconnect with the political sphere has been identified as a significant gap in the case studies.
- Mechanisms that can enable foresight in government encompass: foresight applications and approaches; institutional relations, structures and processes; and organisational cultures and behaviours.

6.1 Discussion of findings

This report has highlighted the benefits and challenges of mainstreaming foresight in government practice for SD and well-being governance. In tackling the first research question concerning the role that foresight plays in strengthening sustainable development and well-being governance, the literature review and the empirical evidence show that foresight can deliver effective anticipatory governance; however foresight is not and should not be seen as a panacea for today's challenges, and it does not provide easy or straightforward answers. Rather, it adds depth to critical thinking by integrating long-term perspectives and supports policymakers in acknowledging and navigating uncertainty, rather than hiding it. As such, it is one of several inputs alongside other sources of evidence and data that should not be neglected. Clarity over what foresight can or cannot (or should not) do is not simply a way to manage expectations, but a way to strengthen its effectiveness and promote buy-in.

Within the Welsh Government context, foresight is used in Welsh Government policymaking, but this is not embedded as an organisational practice yet. Consequently, while the FTR is considered a valuable document, it does not directly inform policymaking (with some exceptions).

This is a challenge many governments face and it contributes to the gap between foresight outputs and actions, which can weaken the business case for developing in-house foresight functions. With regard to the second research question about the mechanisms that can strengthen the Welsh Government foresight ecosystem in a context of crisis, this research has found that the Welsh Government is well-placed to upscale and mainstream its existing foresight functions successfully. The legal framework provided by the WFGA is a strong platform for embedding foresight and long-term thinking while at the same time promoting the pursual of well-being and sustainable development objectives. In other words, the WFGA can be used as a compass for meaningful and intentional future-regarding policymaking, and its architecture, which includes future-regarding tools such as the FTR, has the potential to strengthen the foresight ecosystem in Wales, beyond government departments. However, this cannot be achieved through occasional and piecemeal applications.

This can be addressed through reinforcing current and introducing new mechanisms that relate to: foresight applications and approaches; institutional relations, structures, and processes; organisational capability, culture, and behaviours.

7 Foresight applications and approaches

Participatory and inclusive foresight can create partnerships and cooperation beyond silos and hierarchies (Miles, 2008; Martini, Hölsgens and Popper, 2020). These principles need to underpin the foresight process from its outset and need to inform the selection of foresight methods. Maintaining flexibility and considering the suitability of methods such as citizen panels or scenarios that consider open plausible futures from different angles can be particularly suited to fostering multi-stakeholder dialogues over contentious issues, encouraging ownership and buy-in. Governments are already exploring simultaneous use of different foresight methods, often including a creative focus. The Portuguese project Lab2050 is an example of foresight work that encompasses different methods to empower people from diverse background to actively participate. In Finland, the Timeout method has been used to promote constructive dialogues among citizens and stakeholders alike, whereas the Flemish foresight team talked about the positive results of using serious games.

Furthermore, foresight can feed directly into policymaking by deepening the ability of organisations to understand uncertainty, even in a context of crisis (Wayland, 2015). Uncertainty cannot be avoided when dealing with societal challenges, and policymakers need to be well-equipped to engage with it in a transparent and accountable way rather than avoiding it. Foresight methods, such as trend and megatrends analysis, cross-impact analysis, Delphi, wild cards and weak signals, bring together different expertise and evidence that can increase anticipatory capacity and decrease governments' reaction times even when short-term issues manifest (Bengston, Kubik and Bishop, 2012). In countries such as Finland and the UK, cross-departmental foresight work was central to broadening the set of options under consideration, thus improving the quality and reach of foresight outputs.

Foresight can be used to analyse the implications of current decisions for future outcomes, as well as the longer-term impact of trends that may render a policy more or less effective. Again, the contribution of foresight is greater clarity over interventions' future pathways and developments (Georghiou, 2008; Störmer *et al.*, 2020). Some foresight methods, for example, scenario approaches, road-mapping or backcasting, can be particularly effective in creating a mindset open to the idea that we can actively shape the future by looking at long-term goals and anticipating risks and opportunities. It follows that foresight can strengthen crisis preparedness and response. Moreover, discussions with Welsh Government officials and international participants revealed that foresight can be maintained during crises through dedicated units or teams. These teams

are not directly involved in operational delivery, but maintain constant dialogue and knowledge of what happens on the ground and can design ad hoc foresight exercises to stress-test the options that are being discussed. What is more, there are important learning opportunities for conducting foresight exercises from experiences of crisis response and management. In particular, during crises, there is a more concerted effort in creating cross-departmental groups that discuss challenging situations and issues strategically and holistically, overcoming silos, and creating an understanding of the bigger picture, which are incidentally listed as drivers of successful foresight in the academic literature.

8 Institutional structures and relations

Institutional structures and relations concern the shape that foresight functions can take, both internally and externally, and the stakeholders involved. Often this report referred to the importance of considering local contexts before adopting a model from another country. There was consensus in the data that having a dedicated foresight unit located in a rather central government department was helpful to ensure the continuation and sustainability of foresight. The case studies provided examples of how their focus and direct involvement supported policymaking processes. In Finland, the focus is on the production of high-level strategic documents, whereas in the Flemish case the work is more project-focused and conducted in partnership with government departments. The UK GO-Science unit has a comprehensive approach, with the Futures and Foresight teams focussing on capability building, direct support to government departments, and delivery of cross-departmental foresight projects respectively. The Portuguese PlanAPP is following a similar approach. So far, the Welsh Government unit within the Sustainable Futures Division has had an approach that is closer to the Finnish one, albeit at a smaller scale.

Adequate resourcing of these units is a question that often limits the ability to broaden the offer. In this, support from senior leaders has been cited as key but this may not be sufficient and that engagement with the political sphere might also be needed. This is an aspect that was not fully tackled by this report's literature review, but the data points to its importance. Among the cases considered, Finland offers the most advanced example of engagement between foresight and the political sphere (e.g. the Parliament); however, it is not clear to what extent this engagement actively shapes government's action. In Wales, the WFGA only applies to the Welsh Government and not to the Senedd, although there is scope for exploring mechanisms to integrate futures and foresight in parliamentary debates.

There can be risks with this approach, namely that foresight can be used instrumentally with an excessive normative purpose and for legitimising decisions that have already been taken. These risks can be mitigated by ensuring that foresight is participatory and transparent, by creating deliberative spaces where contested issues can be openly discussed, by ensuring independence and neutrality in the application of the methods, and through clarity in using specialist language (e.g. avoiding terms such as 'forecasting' where not appropriate, or referring to 'stress-testing' if the analysis involves pre-defined options).

Externally, data indicates that foresight thrives in collaborative and open spaces. The challenges faced by governments rarely fit within administrative boundaries and as such, many participants talked about the importance of collaborating with other countries or regions on common problems. The Flemish foresight unit had the most explicit commitment to inter-regional collaboration on foresight, signalling that this is an aspect that is likely to be particularly relevant for devolved governments and administrations, which often do not have controls over all the key governance levers and which, therefore, would benefit the most from external collaborations and knowledge exchange.

In Wales, there is a strong opportunity to build on existing collaborations among public sector actors under the legislative frame of the WFGA. This research has shown that there is already a strong and vibrant foresight ecosystem in place. The Welsh Government can draw on this network and contribute to address gaps in the Welsh ecosystems, as there are some organisations, including some local authorities, that struggle to initiate or actively engage in foresight projects and knowledge exchange activities.

9 Embedding foresight: organisational capabilities, cultures, and behaviours

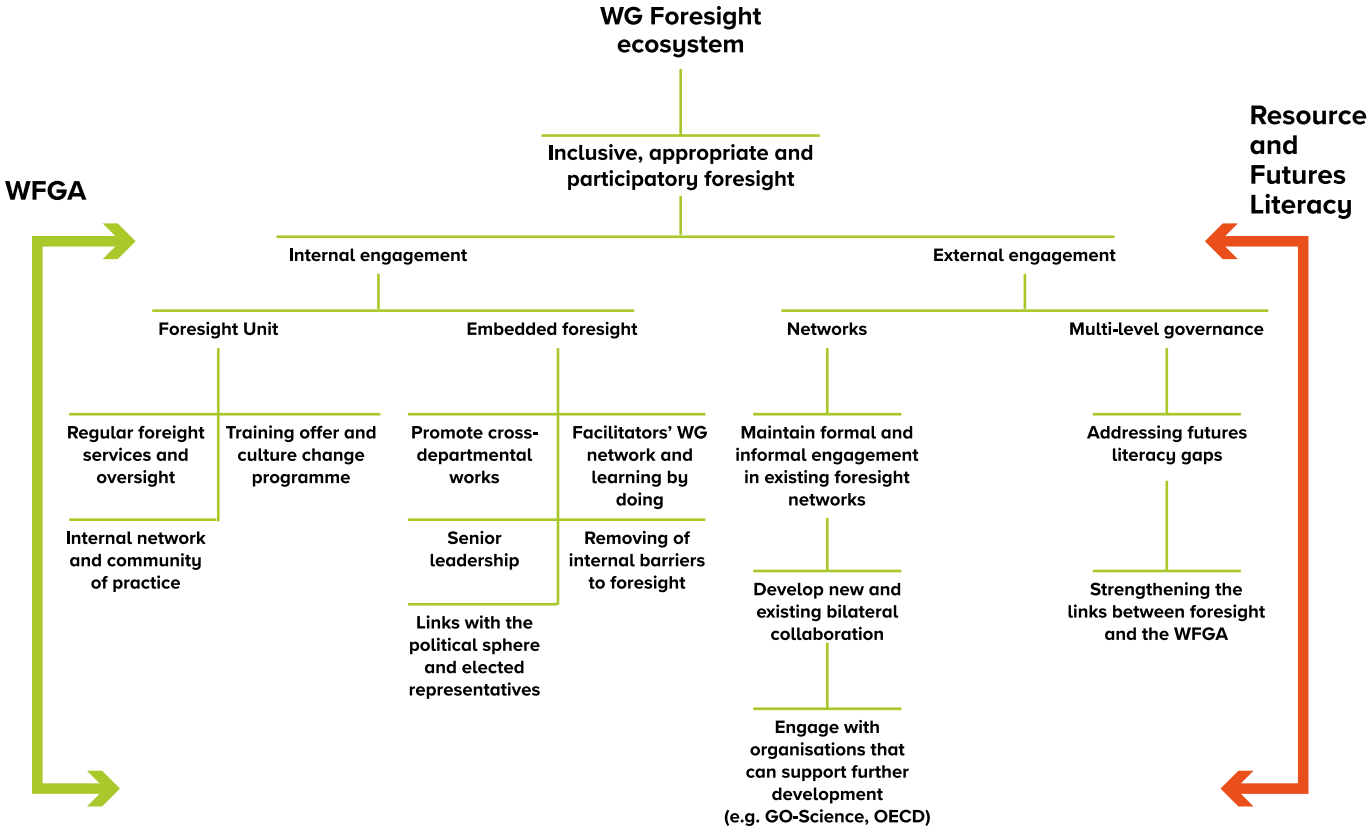
Foresight can become a lever for policy learning if it becomes embedded as a practice within the organisation's policy cycle. The research has highlighted two mechanisms that can facilitate this. One pertains to increasing capability to use foresight methods appropriately and with relative methodological ease; the second one is about the culture, behaviours, and less visible institutional signals that can unintentionally act as barriers to embedded foresight. Participants highlighted a gap in futures literacy in Welsh Government departments, which can manifest in lack of knowledge of specific foresight methods and can lead to scepticism about their usefulness. In tackling this, foresight toolkits and training opportunities are useful but they do not guarantee a full uptake. Indeed, the challenge is not so much in following the steps to organise and deliver foresight workshops, but creating the space and giving people the platform or, as participants put it, the permission, to conduct these activities. Support from senior leaders here becomes key and the use of foresight language in day-to-day interactions can help normalise this practice. In so doing, foresight risks becoming an additional bureaucratic step, perceived by civil servants as a burden rather than a support to decision-making. Promoting futures literacy and foresight as a practice might shed light on other mechanisms that can act as barriers, including raising questions about how to involve other professions within the organisation that are not directly involved in writing policies, but have nonetheless an important role. In all cases considered, teams were proactive in building up diffuse capabilities alongside their central foresight functions. Interesting, in this regard, is the work that PlanAPP has conducted with the support of the OECD, which in their view increased the salience of foresight itself. In Wales, there is a strong platform in place that can support futures literacy. The Welsh Government's Well-being of Future Generations Continuous Learning and Improvement Plan 2023-25 is focussed on empowering civil servants and creating agency in different policy-relevant skills. Similarly, the Culture Change programme is already focussed on behaviours that are conducive to participatory, prospective, and action-oriented foresight. At a higher level, the WFGA frames long-term thinking as a way of working, rather than a set of tools or outputs.

In light of this, futures literacy can be framed as a policy capability underpinned by a culture that is comfortable with and encourages long-term thinking. This is a culture that values long-term thinking, including embracing and navigating the uncertainty that comes with it, an essential lever

for addressing specific capability and particular futures literacy gaps (e.g. specialist knowledge of foresight tools and methodologies). Professionals that are exposed to such a culture are more likely to engage with the rationale behind foresight and use foresight evidence to inform decision-making.

By bringing these mechanisms together it is possible to sketch out possible pathways and identify areas for interventions for the Welsh Government going forward. Figure 5 provides a visual of this. Here, the WFGA is represented as a driving factor (green arrow), and resources and futures literacy as areas that could slow down progress (orange arrow).

Figure 5: Foresight ecosystem pathways (source: author)



10 Key recommendations

To conclude, this research has identified the following opportunities for the Welsh Government, and in particular for the Sustainable Futures Division, to strengthen its in-house foresight functions:

1) Increase the visibility of foresight and its links to the WFGA in the organisation. This can be achieved through websites signposting freely available foresight resources and toolkits, and showcasing how existing resources (e.g. the FTR) can be used to inform policymaking.

2) Develop an internal network of civil servants that use or wish to use foresight in policymaking to create momentum.

3) Explore the opportunity and scope to develop regular foresight services. These could be, for example, the production of short foresight notes tackling topical issues in line with Welsh Government priorities, with direct reference to the FTR and specific indication of their policy relevance. In addition, regular foresight **learning by doing** events could be co-developed with policy teams to explore specific policy issues using a variety of foresight methods. These events should promote cross-departmental learning and knowledge exchange, while at the same time ensuring policy impact.

4) Engage senior civil servants in analysing and tackling existing organisational barriers and enablers to embedding foresight as a practice at a strategic level. Explore potential mechanisms to engage the Senedd in Welsh Government foresight work. Consider developing a Welsh Government-specific **foresight maturity matrix** for monitoring and evaluating progress over time.

5) Promote existing or new training and learning opportunities (such as the currently available Learning & Development 'Futures Toolkit' course), if necessary, relying on external contractors to deliver training, while limiting outsourcing the delivery of foresight projects. In addition to the existing training offer, build on the current continuous learning and improvement offer and Culture Change Programme to specifically include foresight and promote the embedment of foresight as a practice.

6) Increase proactive engagement with the network of internal and external stakeholders, including the Futures Thinking Network (Wales), the UK GO-Science team, international partners and organisations. Consider organising Wales-wide annual foresight events.

7) Explore further integration between foresight and crisis preparedness and response activities in the Welsh Government. Consider working with the Civil Contingency & Resilience Department for mutual learning and further developing anticipatory governance.

10.1 Limitations of this study and areas for further research

This report aims to provide the Welsh Government with a strong evidence base for further developing its foresight functions. As such, the scope and breath of this work mean that there are some limitations that need to be acknowledged.

First, this report is based on a small number of case studies which limits the extent to which it can be considered a comprehensive overview of foresight functions in governments around the world. Furthermore, the report does not conduct a formal comparative analysis of these cases, nor does it provide a framework for assessing stronger or weaker models. Rather, the focus was on drawing lessons that could be considered in the Welsh Government context.

Second, despite their role and profile in this field, transnational and international organisations were not considered as units of analysis. Contributions from international organisations such as the OECD or the UNDP are considered in relation to their direct work with governments.

Third, this report does not fully address the question of how to improve foresight outputs through creative and speculative design methods or serious games. This is a vibrant area in futures studies, and some participants expressed interest in these tools even in government settings.

Fourth, the foresight policy pilots and interview data focussed on the integration of foresight in the earlier stages of the policy cycle. However, there is scope for further research into how to integrate foresight with later stages, primarily policy evaluation, and to test whether this can reinforce policy learning and improve policy outcomes over time.

Finally, this report does not address emerging issues that will influence applications of foresight in the short and medium term. These are, for example, the increased availability of quantitative data for the creation of composite indicators to measure performance over time, and the spread of Artificial Intelligence (AI). Analysing the risks and opportunities for governments of the emergence of powerful tools such as AI is an area for further research.

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12 Glossary of terms

Anticipatory governance	A system of governance that actively considers foresight to identify trends, make predictions and reduce risk in decision-making.
Black Swans	An unpredictable event that is beyond normal expectations and has potentially severe consequences.
Delphi	A data collection methodology delivered through 'rounds' of data collection in which expert participants initially provide their views and then have opportunities to reflect on and respond to the views of other experts contributing.
Forecasting	The process of making decisions based on past and present data.
Foresight (and exploratory vs. normative foresight)	A range of approaches to ensure that thinking about the future influences decision-making. Exploratory foresight begins from the present and considers the potential impact of various events and trends. Normative foresight starts from the future and asks what events or trends would lead to that outcome. There is a more extensive description of foresight in Chapter 2.
Foresight ecosystem	The range of organisational structures, networks, resources and capabilities relating to foresight within a particular context.
Futures and Futures studies	The systematic and often interdisciplinary study into trends, predictive approaches and the ways in which decisions can have regard for the link between the past, present and the future.
Futures Wheel	A method for visualising the direct and indirect future consequences of a particular change.
Horizon Scanning	An overarching term to refer to the consideration of how trends or emerging issues may affect current or future policies.

ISM model	The ISM model is a tool that acknowledges the role of individual, social, and material factors in influencing behaviours and attitudes and, as such, it supports broader and collaborative thinking. It has wide applicability to a wide range of policy areas
Megatrends	Trends that have an effect on a global scale.
Multilevel or Polycentric governance	Multilevel governance recognises the vertical and horizontal spread of power within governments. Polycentric governance recognises the many different seats of power.
PESTLE	An acronym that stands for: Political, Economic, Societal, Technical, Legal and Environmental. A PESTLE analysis is a structured way of considering a range of factors that might affect an organisation.
Policy cycle	The set of processes used to produce a policy which are normally described as being cyclical to reflect the importance of addressing the learning from previous policies when developing new policies.
Poly- or perma-crisis	Both terms describe an ongoing state of crisis. Poly-crisis refers to there being multiple, interconnected global crises whereas perma-crisis is a combination of permanent and crisis and describes the expectation that the state of crisis will not end.
Scenario Planning	A form of strategic foresight in which organisations consider a variety of possible or probable futures.
Strategic foresight	A planning focused approach to futures.
Weak Signals	The first indication that a change or emerging issue may become important in the future.
Wild Cards	A low-probability but high-impact event.

13 Appendix 1

Foresight policy pilots' agenda

1) **Introductory meeting (2 hours):** the aim of the meeting was to meet the team, understand the policy context, map out the expected outcomes, and discuss the scope of the work and potential methods and approaches.

2) **Diagnostic session (3 hours):** the aim of the session was to analyse the policy issue and the policy intervention through a futures lens. Tools used in this session included: futures wheel; future-facing stakeholder mapping; Future Trends Report Wales; PESTLE analysis; drafting of multiple scenarios. The FTR was directly used to identify trends that could positively or negatively influence policy implementation and outcomes, as well as to discuss how the policy could contribute to accelerate or decelerate certain trends.

3) **Anticipatory session (3 hours):** the aim of this session was to critically discuss the scenarios, identify links between the proposed intervention and the WFGA objectives; identify and prioritise actions; where possible, deepen the analysis of priority actions through roadmapping.

4) **Debriefing session (1 hour):** the aim of this session was to conduct a narrative evaluation of the foresight exercise and reflect on the benefits and limitations of conducting these activities for policymaking in the Welsh Government context. Key learning points were addressed and outlined in the session.

For the preparation and selection of foresight methods academic publications and freely available resources were employed. Amongst the latter, a notable resource is the GO-Science Futures toolkit for policy-makers and analysts, available at: www.gov.uk/government/publications/futures-toolkit-for-policy-makers-and-analysts last access: 07/08/2023].

Appendix 2

Outline of research participants

P1: Participant from the Portuguese Government

P2: Participant from the Welsh Government

P3: Participant from the Welsh Government

P4: Participant from a UK consultancy

P5: Participant from a UK consultancy

P6: Participant from academia

P7: Participant from an international organisation

P8: Participant from a Welsh public sector organisation

P9: Participant from the Welsh Government

P10: Participant from the Welsh Government

P11: Participant from the Portuguese Government

P12: Participant from the Welsh Government

P13: Participant form a Welsh public sector organisation

P14: Participant from a Welsh public sector organisation

P15: Participant from the Flemish Government

P16: Participant from the Flemish Government

P17: Participant from an international organisation

P18: Participant from the Finnish Government

P19: Participant from the Finnish Government

P20: Participant from the Welsh Government

P21: Participant from the Welsh Government

P22: Participant from the UK Government

P23: Participant from the UK Government

P24: Participant from the UK Government

P25: Participant from a UK consultancy

P26: Participant from the Portuguese Government

P27: Participant from the Portuguese Government

P28: Participant from the Welsh Government

P29: Participant from the Welsh Government

P30: Participant from a third sector organisation in Wales

P31: Participant from the Finnish Government

P32: Participant from the Welsh Government

P33: Participant from the Welsh Government

P34: Participant from the Welsh Government

P35: Participant from the Finnish Government