

Policy Brief

Recommendations from the Research Council of Norway's International Advisory Board **Issue 5 / January 2021**

A future-proof and inclusive research and innovation agenda

There is growing recognition that achieving a sustainable and productive future will require societies to enact fundamental changes. Norway, like the rest of the world, is facing a number of economic, societal, political, environmental and technological challenges, many of which have been aggravated by the current coronavirus crisis. Achieving the systemic changes needed to confront these challenges requires a pro-active and integrated approach to policy development.

Society cannot afford to wait for crises to occur but must act pre-emptively, introducing disruptive, new and step-change initiatives and transformations. In this context, a culture of future-oriented thinking is needed.

Naturally, future-oriented analysis is not a silver bullet that can in itself respond to the complexity of societal challenges that Norway faces, but by bringing together different communities with complementary knowledge and experience and discussing alternative options, forward-looking activities can enhance intelligence in policy-making and implementation, broaden perspectives and encourage thinking outside the box, offering vital input for 'quantum leaps' in policy-making.

To improve the robustness and adaptability of the Norwegian research and innovation system, making it better equipped to respond to complex and cross-cutting societal challenges and enact system innovation, there is a need to:

- Include a forward-looking perspective in future revisions of the Government long-term plan for research and higher education
- Ensure forward-looking analyses are used more systematically in the Norwegian research and innovation system
- Ensure that diverse actors are involved in such forward-looking activities

Include a forward-looking perspective in future revisions of the Government long-term plan for research and higher education

Achieving a sustainable future will require fundamental changes to core systems of production and consumption, economic structures and incentive mechanisms, skills development and attitudes. System innovation is necessary but is inherently complex and uncertain, characterized by risks, setbacks, unintended outcomes and trade-offs. Such innovation is also often difficult to achieve due to strong path-dependencies inherent in the dominant techno-economic regimes.

In Norway, the prevalence of a soft and consensual co-ordination of sectorial interests at operational level means there is a particularly strong tendency to preserve existing solutions. OECD, in its country review of Norway¹, points out that the structures of Norway's research and innovation policy governance implies that "research policy is guided not *ex ante* by strategic decision making but is the *ex post* result of the balance between the different elements of the system" (p. 202).

Increased use of foresight analysis in the Norwegian research and innovation system could prepare the ground for the strategic decision making needed in the face of complex societal challenges. Through the use of diverse methods such as scanning the horizon

for emerging changes, analysing megatrends, and developing multiple scenarios for future developments in key areas, strategic foresight reveals implicit assumptions, challenges dominant perspectives, and explores surprising and significant potential disruptions that might otherwise be dismissed or ignored².

The process of strategic foresight can be conceptualized and implemented in various manners, but most scholars and practitioners follow a rather similar logic that roughly divides the process into three phases:

- the early detection and analysis of information
- the generation of foresight knowledge
- the development of future (policy) options³

Phase	Early Detection of Information (phase 1)	Generating Foresight Knowledge (phase 2)	Developing Policy Options (phase 3)	
Description	Identification and Monitoring of Issues, Trends, developments, and Changes	Assessment and Understanding of Policy Challenges	Envisioning Desired Futures and Policy Actions	
Value Chain	Information	Knowledge	Insights	Action
Policy tool	Horizon Scans	Future Projects	Scenarios	

By looking beyond the scope of traditional policy silos and considering how multiple future developments can intersect and interact in unexpected ways, strategic foresight equips governments and societies with the capacity to navigate, adapt, and shape the future through better policies. Foresight can play:

- a corrective role (addressing deficiencies, systemic failures and policy lock-ins)
- a disruptive role (encouraging an emphasis on wild cards, crisis or breakthrough events which can completely change the current status quo)
- a creative role (stimulating the conditions whereby new networks and structures can evolve and grow).

In practice, a mix of these roles often comes into play.⁴

Despite its clear advantages, particularly in a consensual system like the Norwegian research and innovation system, strategic foresight remains underutilized. OECD notes that “while smaller scale foresight exercises do exist in the Norwegian research and innovation landscape, a more strategic and comprehensive foresight element is missing. The lack of such a foresight study is remarkable” (p 202).⁵

A natural first step in ensuring more future-oriented policy development in the Norwegian research and innovation system, would be to link the revisions of the Government long-term plan for research and higher education (LTP) to a comprehensive foresight exercise. The LTP sets out ten-year objectives and priorities for research and innovation investments, as well as more concrete goals for efforts in the first four years of the plan. It is updated every four years, with the next update scheduled to be launched in October 2022.

The Research Council of Norway has commissioned a foresight exercise to inform its advice to government in connection with this revision, with plans to identify trends and drivers of change for the LTP's five priority areas and devise scenarios for the future development of these priority areas. The exercise will also evaluate the need for new priority areas that cut across or fall outside current priorities, as well as identify cross-cutting structural measures to enable the development and improvement of strong research environments. Other actors in the Norwegian research and innovation system have also carried out or are planning forward-looking activities that could serve to inform the upcoming update. However, an overarching government-led strategic foresight effort is lacking. Such a top-level, comprehensive foresight is clearly needed to mitigate the challenges discussed above.

Given that the revised LTP must be finalised in the space of the next two years, a full-scale government foresight exercise might be difficult to carry out. However, a limited pilot study, which draws heavily on the numerous foresight exercises currently planned/running at lower levels in the Norwegian research and innovation system should be carried out in connection with the 2022 update of the LTP.

A government-level foresight exercise must be mindful of the oft-observed challenge of linking “future-oriented exercises to the messiness and immediacy of political events and decision-making”⁶. In order to be impactful, it is important that a foresight exercise linked to the LTP takes into account the key learning points from strategic foresight exercises carried out internationally. To achieve impact, this foresight exercise should:

- **Ensure analytical rigor.** The foresight must be based on high quality research and the best available evidence, ensuring solid results. If the exercise lacks methodological and analytical rigor, the credibility of the exercise and the trustworthiness of its results will be challenged, and it will become difficult to translate them into generally acknowledged policy recommendations⁷.
- **Ensure anchoring at top policy level.** As foresight deliberately aims to challenge conventional wisdom and seeks insights on the

margins of current thinking, high level legitimisation and support is essential. Concretely, ensuring a strong link between the foresight and the development of the LTP could in a first stage be facilitated through the involvement of a high-level foresight champion – an individual that is influential and visible in the policy system⁸.

- **Ensure multi-ministry ownership.** A foresight exercise linked to the development of the LTP must necessarily have a quite broad policy perspective. It will thus be important that it succeeds in creating strong cross-ministerial ownership and a well-functioning cross-ministerial working environment, for example by drawing on already established cross-ministerial structures such as the ministries' research committee.
- **Integrate stakeholders beyond ministries.** The complexity of the societal challenges the LTP aims to address means an inclusive cross-ministerial process is not sufficient; participation must be extended to companies, interest organisations, NGOs, think-tanks, and the academic sector. A multi-stakeholder approach, drawing on a multitude of internal as well as external sources of knowledge will yield a higher quality process and product, with high legitimacy. Ultimately, it can improve policy-makers' political responsiveness and facilitate policy development and implementation⁹.
- **Ensure careful delineation of the theme.** The LTP foresight should not be too broad in nature, as experience suggest such exercises tend to become too removed from policy-making and thus not have the desired impact on policymaking. On the other hand, it is important that the LTP foresight does not become too narrow in the search for future trends, developments, and events. Disruptive change most often originates outside the system, and a foresight process must thus consider developments outside the immediate theme in question. For example, a study on the future of transportation should include not only technological advancements

in vehicles, but also societal needs for mobility due to potentially changing patterns of work, leisure and consumption. Ideally, the foresight exercise should be layered, starting out with a global geopolitical scan of trends. Based on this, a number of themes are selected for more focused foresight exercises.

- **Devote sufficient resources to communicating the results of the exercise.** Communication with stakeholders upon completion of the exercise through high-quality and varied communication outputs - specifically tailored to varied stakeholder groups - is essential to ensuring non-experts can understand and potentially use the results of the study. Experience from foresight exercises carried out internationally show that this is increasingly key to generating a lasting impact of the exercise.^{10, 11} The foresight exercise linked to the LTP should build on these lessons, devoting a greater proportion of effort and attention to communication than has traditionally been the case for foresight exercises.

Recommendations

IAB recommends that the government should consider:

- Carrying out a broad national forward-looking exercise every four years in connection with the revision of the Government long-term plan for research and higher education. A limited pilot exercise should be carried out in connection with the 2022 revision of the long-term plan.
- The forward-looking exercise should:
 - Ensure analytical rigor. Basing the exercise on high quality research and the best available evidence will help ensure that the credibility of the exercise and the trustworthiness of its results are beyond reproach.
 - Ensure anchoring at top policy level through the involvement of a high-level foresight frontperson.
 - Ensure multi-ministry ownership
 - Integrate stakeholders beyond ministries to ensure a high-quality process and product, with high legitimacy.
 - Ensure careful delineation of the theme, avoiding on the one hand the risk of constructing an exercise that is too broad in nature to achieve tangible impact on policymaking, and on other hand avoiding an exercise that is too narrow in scope which misses important and potentially disruptive developments outside the immediate theme in question.
 - Devote sufficient resources to communicating the results of the exercise through high-quality and varied communication outputs, specifically tailored to varied stakeholder groups.

Ensure forward-looking analyses are used more systematically in the Norwegian research and innovation system

While organizing impactful interventions – such as an effective foresight exercise linked to the development of the LTP – is a logical first step in building foresight capacity and acceptance in the Norwegian research and innovation system, evaluations show that there is a learning curve to doing foresight. Countries or companies which only rarely carry out such studies tend not to achieve the desired results. Those countries that are successful in carrying out high-impact forward looking exercises are those that have adopted a consistent and coherent approach to initiating, planning and carrying out such exercises, as well as to subsequent implementation¹². This contrasts with a common mistake of perceiving foresight to be a niche responsibility for only a small group of experts, or about one-off projects whose impact is only temporary and limited.¹³

The foresight exercises linked to revisions of the LTP every four years should thus not be conceived as a series of stand-alone exercises. Rather they should be a continuous process whereby learning – both from the national process and international experiences – and improvement of the process is a continuous focus. A good example in this respect is the regular foresight exercises run by the German Federal Ministry of Education and Research. As a consequence of the perceived success of the first foresight process, a decision was made to establish foresight within the ministry as a continuous anticipatory learning process. For this purpose, a ‘foresight system’ was designed and implemented. This system cyclically evolves in the space of 4-5 years through the following phases: scanning, analysis, implementation and preparation of the next cycle¹⁴. The search and analysis phase lasts about two years. Results from this phase are then fed into relevant policy processes, for example into long-term programme planning for innovation policy. Each foresight cycle concludes with an in-house reflection phase in which the subsequent cycle is prepared. The analyses from an evaluation strand which accompany the search, analysis and implementation phases forms part of this reflection phase.

Furthermore, it is important that government foresight activity is not restricted exclusively to preparing

LTP revisions. Foresight can be used at any point in the policy cycle, from initial scoping to design and implementation, through to review and testing of existing strategies. Foresight could thus also play an important role in the implementation and follow up of the plan. A layered foresight approach should be explored whereby an overarching foresight exercise – for example focusing on what should be the top three missions for Norway in the next ten year period – could be followed by more concrete foresight exercises, for example looking into how these top three missions could be implemented in a more detailed fashion.

Establish hubs of foresight experts – both externally and internally

To successfully operate a continuous foresight process, ministries must be able to draw on the intellectual capacity and skills needed to implement strategic foresight thinking and apply it to policy-making. There are indications that such skills are in limited supply in the Norwegian research and innovation system. Hiring from abroad is fine for the start-up phase, but international experiences point to the need for establishing a local sounding board that can be aligned with local policy needs and capacities. Academics that can connect with stakeholders, provide legitimacy and insight in the methodology are a distinctive asset, and they provide a steady source of new ideas, intelligence and international foresight connections.¹⁵

Ideally, in the long-term, a diverse set of foresight researchers and practitioners should evolve – both within academia and within the private sector in the form of more consultancy-based services. Finland is an example of a country that has taken a strategic approach to the development of national foresight capacity, with a government-coordinated national foresight network bringing together national foresight actors in a discussion and coordination forum.

An external hub of foresight experts should be coupled with an internal hub of foresight experts. Those governments that are truly successful in integrating forward-looking analysis into its policy process are those that have permanent personnel dedicated to the task of advising and carrying out foresight. The aim is not to centralize foresight, but rather to provide some of the heavy lifting that will

enable an effective mainstreaming and integration of foresight practices across all government departments and within central decision-making processes.¹⁶ Numerous countries – Finland, Germany, the United Kingdom, France, Canada, South Korea, Singapore,

Japan, several Latin American countries, South Africa, etc. – have established entities with a special responsibility for forward-looking activities close to policy makers.

Foresight entities in national governments – examples

Finland

The Finnish Government Foresight Group lends support to national foresight work, joint foresight processes and the development of national foresight activities. Its key objective is to help foresight activities and foresight-based information forge a connection with decision-making processes. A Secretariat assigned to the Prime Minister's Office performs preparatory work and aids the Government Foresight Group's work.

Singapore

The Centre for Strategic Futures (CSF) was established as a futures think tank within Singapore's government to focus on blind-spot areas, pursue open-ended long-term futures research, and experiment with new foresight methodologies. It now operates as a part of the Strategy Group in the Prime Minister's Office. In addition, various government agencies have recognised the value of foresight work and begun to set up their own foresight teams, which conduct more domain-specific horizon scanning and futures research.

Canada

Departments throughout the Canadian government are able to draw on the foresight capacity of the centrally housed Policy Horizons Canada. Their mandate is to help the Canadian government develop future-oriented policy and programs that are more robust and resilient in the face of disruptive change. To that end they analyze the emerging policy landscape; engage in conversations with public servants and citizens about forward-looking research to inform their understanding and decision making; and build foresight literacy and capacity across the public service.

United Kingdom

The Horizon Scanning Programme Team coordinates futures work across government to integrate futures into policymaking. It collaborates with the Cabinet Office and also supports a Cabinet Secretary chaired Heads of Department – Horizon Scanning meeting, where Permanent Secretaries consider the long-term impact of key futures topics.

Build ministry-wide competence and absorptive capacity

While building dedicated internal capability in exploring futures can be very impactful, it is also important to ensure a broad base of futures thinking and skills in government ministries.¹⁷ All Norwegian ministries have a responsibility to contribute to research and competence building within their respective sectors.¹⁸ Most ministries have detailed

how they will exercise this sectoral responsibility through dedicated research strategies that build on the LTP, but which details the priority research areas for each ministry. Current strategies run until 2020. The revision of these strategies could serve as a focusing device for building ministry-wide foresight competence and absorptive capacity.

The process recently carried out to devise Ministry-level strategies in Finland could serve as an instructive example of how such a process could be carried out in the Norwegian context. With the aid of personnel from the Finnish Government Foresight Group, a comprehensive scenario-based strategy process was recently conducted in nearly all the ministries, with the government officials of the ministries being the content creators and owners. The process resulted in the development of new strategies, but also served to forge a common understanding of the factors affecting the future of Finland, helped create foresight teams in ministries, increased practical experience with foresight among civil servants, and established a common framework and language of foresight within the government. The joint ministerial foresight work now continues with the experimentation of digital tools across the government for continuous horizon scanning¹⁹.

Recommendations

IAB recommends that the government should consider:

- Establish a foresight system linked to LTP revisions, ensuring forward-looking activities are not a series of stand-alone exercises, but a continuous process whereby learning and improvement of the process is a continuous focus.
- Establish hubs of foresight experts – both outside and within ministries, ensuring ministries are able to draw on the intellectual capacity and skills needed to implement strategic foresight methods and apply it to policy-making.
- Build ministry-wide foresight competence and increase their absorptive capacity through a foresight-based update of ministerial research strategies.

Ensure that diverse actors are involved in forward-looking activities

Norwegian research and innovation policy has a strong tendency to favour established actors' positions in the system, making the Norwegian system particularly prone to inertia and lock-in²⁰. Forward-looking activities should thus have explicit goals for involvement of stakeholders beyond the "usual suspects". Consideration should be given to the potential of involving diverse stakeholders from business, academia, interest organisations, NGOs, the general public etc. - beyond the core stakeholders within the field that constitutes the focus of the foresight. Evaluations of foresight exercises indicate that their added-value increase when it is possible to overcome traditional sectoral or disciplinary barriers and to succeed in engaging able new actors beyond the established and well-known players in the field. This introduces new perspectives, forges novel linkages within the innovation system and increases recognition of the foresight topic area among the various players.

Studies of countries' strategic foresight activities indicate that while an important impact of such activities is to provide systematic knowledge about trends and developments, the more significant benefit is the mutual learning processes and networks created across professional communities and policy areas²¹. The policy benefit stressed by foresight practitioners has thus shifted from the delivery of information on future developments as a basis for priority setting in policy, to facilitating policy implementation through the mediation of self-organisation among actors of an innovation arena²². The lasting impact of a foresight intervention is not only in the concrete outputs, but particularly in the changed ideas of those who participated. However, to reap such process benefits, it is important that foresight activities are framed in such a manner as to ensure that participants do not act as interest representatives, but as insight representatives.

Forward-looking activities should explicitly consider the potential of including citizens' representatives and voices more broadly. The value of broad citizen participation is increasingly reflected in the foresight field. While early foresights mainly involved researchers and industry experts and focused on technology issues, newer exercises frequently point

to the need of involving citizens both as key stakeholders and experts. Linking foresight and citizen participation approaches can help set scientific courses in line with societal needs and aspirations.

There are at least three different rationales for undertaking public participation: substantive, normative and instrumental²³. The substantive argument states that considering lay assessment of risks and opportunities often leads to better decisions than merely relying on experts' judgement. The normative rationale is based on the notion that the public is best qualified to decide on matters that lie in their own interest. Finally, the instrumental argument reasons that decisions that are taken in consent with laypeople are more likely to be legitimate and accepted.

Broad online consultations are one obvious tool for citizen engagement, but efforts to engage citizens more directly should also be explored. In this respect lesson can be learnt from the citizen outreach activities carried out as part of the preparations for Horizon Europe. Two large-scale projects – VOICES and CIMULACT, actively involved large numbers of citizens in setting priorities for the next framework programme and in so doing, explored a variety of methods for citizen and multi-actor engagement in research and innovation priority setting. The knowledge that was gained through these projects, in terms of methodology, infrastructure and results, was documented and presented in a way that can be used to organize similar participatory actions for the future.

CIMULACT also assessed and compared the relative merits between the results and process of citizen focused engagement and traditional foresight. They found that the research and innovation agenda proposed by the CIMULACT project contrasts significantly with expert-based foresight reports, particularly in the promotion of inclusive social experimentation to find scalable solutions to the perceived challenges. Furthermore, key issues such as well-being, work-life balance and related aspects - prominent in the citizen visions, were systematically ignored by the expert-based foresight process.

Recommendations

IAB recommends that Norwegian actors carrying out forward-looking activities should:

- Aim to overcome traditional sectoral or disciplinary barriers and engage actors beyond the established and well-known players in the field.
- Consider the potential of broad citizen engagement. Broad public participation can lead to better outcomes than merely relying on experts' judgement, and decisions that are taken in consent with laypeople are more likely to be legitimate and accepted. Lesson can be learnt from the citizen outreach activities carried out as part of the preparations for Horizon Europe.
- Experiment with diverse and novel methods for cross-sectoral stakeholder and citizen engagement and representation.

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