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A summary of potential cross-cutting missions to address future societal challenges in Norway

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Foresight study for the Research Council of Norway to help inform the future of research and innovation in Norway

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Preface

As part of its current strategy (2020–2024), the Research Council of Norway (RCN) has three primary objectives: ground-breaking research and radical innovation, sustainable development, and restructuring of the business and public sectors. Against this backdrop, the RCN commissioned RAND Europe and DAMVAD Analytics to carry out a foresight study to help inform the future of research and innovation (R&I) in Norway. The work will contribute to the development of a robust evidence base for the RCN's input to the revision of the Norwegian government's Long-Term Plan for Research and Higher Education 2019–2028 (hereafter, LTP). The study will also help inform the RCN's internal decision making, strategies and organisational activities.

The study focuses on the five strategic areas identified in the RCN's current strategy: (i) oceans; (ii) green transition; (iii) health and welfare; (iv) cohesion and globalisation; and (v) technology and digitalisation. The specific aims of the study were to:

- Identify a set of potential priority missions or targeted, challenge-based policy actions within and across (or outside) the five strategic areas that the RCN, together with other stakeholders, could consider implementing in the future to help address societal challenges; and
- Identify system-level structural measures to potentially facilitate the development of a resilient R&I environment in Norway.

We adopted a mixed-methods, participatory approach to the research, involving a variety of methodologies, such as trend analyses, literature reviews, stakeholder interviews, focus groups, an online survey of the public, crowdsourcing ideas and information from experts, future scenario analyses and workshops. All of these methods are covered in this report.

We envisage that the research will be of interest to funders and academia, national and local government policymakers, innovators and practitioners, and industry, and, more broadly, to anyone – including the public – interested in R&I and wider societal challenges.

This report on cross-cutting missions is one in a series of nine reports presenting the findings of the study. The other reports are as follows:

- Health and welfare: An analysis of trends, future directions and potential missions to address societal challenges in Norway
- Technology and digitalisation: An analysis of trends, future directions and potential missions to address societal challenges in Norway
- Oceans: An analysis of trends, future directions and potential missions to address societal challenges in Norway
- Green transition: An analysis of trends, future directions and potential missions to address societal challenges in Norway
- Cohesion and globalisation: An analysis of trends, future directions and potential missions to address societal challenges in Norway

- Structural measures to develop a resilient research and innovation environment in Norway
- Addressing future societal challenges in Norway: Detailed methodology report
- Addressing future societal challenges in Norway: Key trends, future scenarios, missions and structural measures

We have been able to conduct this study because of the contributions of many individuals. We would like to thank the project team at the Research Council of Norway for their excellent guidance, support and advice over the course of the study. In particular, we would like to thank Stig Slipersæter and Philip Lorentzen. We are also grateful to the executive board of the RCN for constructively engaging with us at various points in the study. We would like to thank Andrew Curry (School of International Futures) for helping organise and run the stakeholder foresight workshops. We are grateful for the valuable inputs from the members of our advisory panel of experts, namely, Dr Sonja Marjanovic (RAND Europe, health and welfare expert), Stijn Hoorens (RAND Europe, cohesion and globalisation expert), Prof. Paula Kankaanpää (Marine Research Centre, the Finnish Environment Institute (Suomen ympäristökeskus, SYKE), oceans expert), Prof. Eeva Primmer (SYKE, green transition expert), Dr Jonathan Cave (University of Warwick, technology and digitalisation expert), Prof. Hakan Sicakkan (University of Bergen, cohesion and globalisation expert), and Mona Skaret (Bouvet ASA, research and innovation expert). We are also very grateful to the many stakeholders – across academia, industry, government, the third sector and the public – who kindly agreed to engage with the study at various stages. Finally, we would like to thank our quality assurance reviewers, Dr Susan Guthrie (RAND Europe) and Asbjørn Boye Knudsen (DAMVAD Analytics), for their valuable advice and critical review of the research.

RAND Europe is a not-for-profit research organisation that aims to improve policy and decision making in the public interest, through research and analysis. RAND Europe's clients include European governments, institutions, non-governmental organisations and firms with a need for rigorous, independent, multidisciplinary analysis. DAMVAD Analytics is a Nordic, research-based consultancy with offices in Copenhagen and Stockholm. DAMVAD's consultants have strong analytical and evaluation skills and specialised knowledge regarding research and innovation policy throughout the Nordic region, including Norway.

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Abbreviations

Difi	Digitaliseringsdirektoratet [Agency for Public Management and eGovernment Norway]
EU	European Union
LTP	The Long-Term Plan for Research and Higher Education 2019–2028 – Meld. St. 4 (2018–2019) Report to the Storting (white paper)
OECD	Organisation for Economic Co-operation and Development
PESTLE	Political, economic, societal, technological, legal and environmental
RCN	Research Council of Norway
R&I	Research and innovation
SDGs	[United Nations] Sustainable development goals
UN	United Nations

1. Introduction

The research and innovation (R&I) landscape in Norway is underpinned by Norway's overarching ambition for research and higher education, namely to help facilitate growth in overall value creation, to create new and profitable jobs, to restructure the Norwegian economy and to help implement a transition towards a greener society (Ministry of Education and Research 2019). The development of a strong knowledge base through research is necessary to not only fulfil these ambitions but also to train the Norwegian workforce (Ministry of Education and Research 2019). The Long-Term Plan for Research and Higher Education[1] (hereafter LTP) details the Norwegian government's ambitions and policy for research and higher education in Norway. The LTP establishes ten-year objectives and priorities and concrete goals for efforts in the upcoming four-year period. It sets the course for policy development and investments in research and higher education in Norway.

The Research Council of Norway (RCN) plays a critical role in the Norwegian and international research and innovation landscape, as the national funding agency for R&I. In its current strategy (2020–2024), the RCN details priorities and goals to realise the objectives of the LTP (Research Council of Norway 2020a). As part of its current strategy, the RCN has articulated the following three primary objectives, with the overarching view of achieving a 'well-functioning research and innovation system' (Research Council of Norway 2020a):

- Sustainable development;
- Ground-breaking research and radical innovation; and
- Restructuring of the business and public sectors.

Within this framework, the RCN has also identified five core 'strategic areas' (as shown in Figure 2) within which to focus its priorities and portfolio plans and within which deliver high-impact research and innovation (Research Council of Norway 2020a).

Figure 1. The RCN's five strategic areas identified in its current strategy (2020–2024)

[1] The Long-Term Plan for Research and Higher education 2019-2028 – Meld. St. 4 (2018-2019) Report to the Storting (white paper).

1.1. Objectives of the study

Against this backdrop, the RCN commissioned RAND Europe and DAMVAD Analytics to carry out a foresight study to contribute to the development of a robust evidence base for the RCN's input to the 2022 revision of the Long-Term Plan for Research and Higher Education 2019–2028 (Ministry of Education and Research 2019). The study will also help inform the RCN's internal decision making, strategies and organisational activities. The study focuses on the five main strategic areas identified in the RCN's current strategy for the next ten years (Research Council of Norway 2020a) and is intended to help frame thinking about the future of R&I in relation to these strategic areas in Norway. As noted above, the five strategic areas covered by this study are: (i) oceans; (ii) green transition; (iii) health and welfare; (iv) technology and digitalisation; and (v) globalisation and cohesion. In particular, the study aims to:

- Identify a set of potential priority missions or targeted, challenge-based policy actions within, across or outside the five strategic areas for the next ten years that the RCN, together with other stakeholders, could consider implementing in the future to help address societal challenges; and
- Identify a series of system-level structural measures to facilitate the development of a resilient R&I environment in Norway.

For this study, we regard missions as targeted, timebound, concrete priority actions to help solve one or more societal challenges that the RCN and other stakeholders could consider developing and implementing in the future. In the long term, the missions will help the RCN achieve its overarching objectives (over a roughly ten-year time frame) and eventually contribute to enriching lives locally, nationally and internationally.[2] This report, one in a series of nine reports, presents a set of additional indicative priority missions that cut across or fall outside the five strategic areas.[3] In general, missions span several areas and the cross-cutting missions we propose are particularly comprehensive and could be applicable to all five strategic areas as well as potentially other areas of R&I. Nevertheless, some mission ideas might be more relevant to certain strategic areas, particularly those related to technology and digitalisation, cohesion and globalisation, and green transition, as these strategic areas are wide-ranging. Accordingly, the indicative missions that we have presented in this report have also been discussed in the relevant companion strategic areas reports (Gloinson et al. 2021a; Gloinson et al. 2021b; d'Angelo et al. 2021; Skjoldager et al. 2021a; Skjoldager et al 2021a).

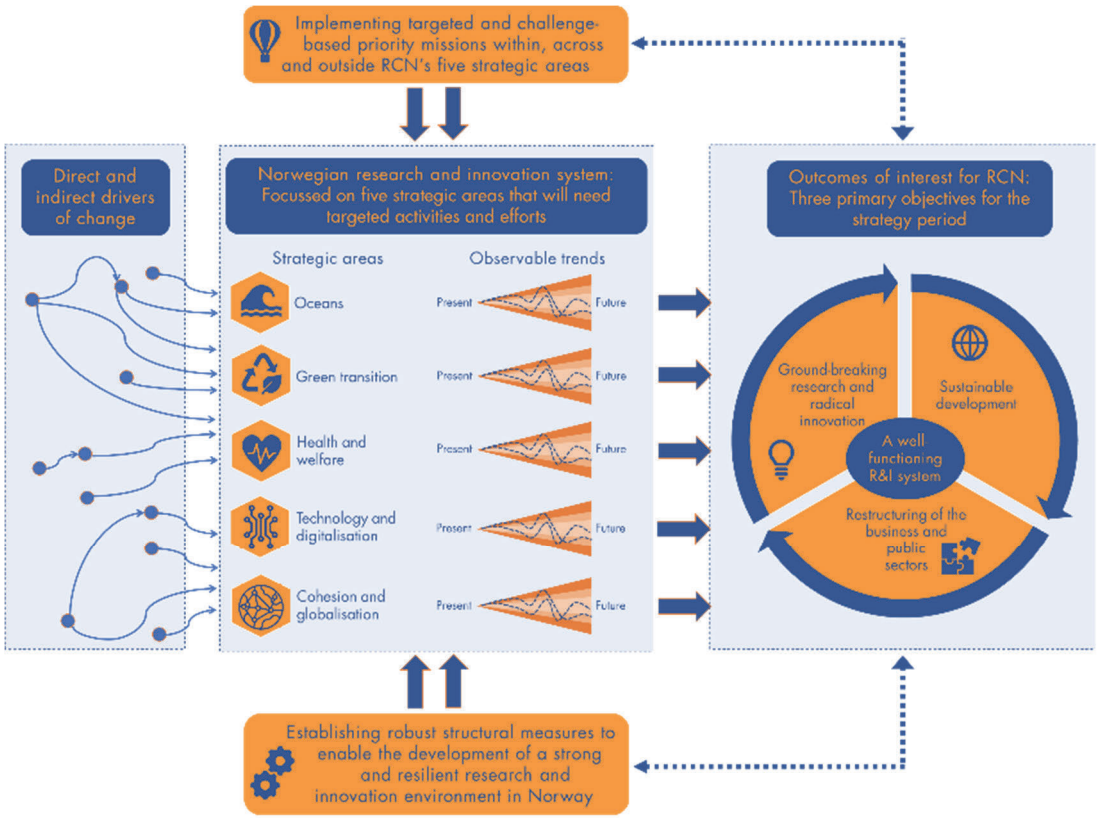
[2] More broadly, missions are systemic policies that operate both as a means of steering economic growth in a particular direction (by, for example, steering investments towards particular societal challenges) and as a tool that can be used to get there (by, for example, setting clear, problem-focused objectives) (Mazzucato 2018). Further details are provided in Chapter 3 of this report.

[3] This report on cross-cutting missions is one in a series of nine reports presenting the findings of the study. The other reports are as follows: Health and Welfare: An analysis of trends, future directions and potential missions to address societal challenges in Norway (Gloinson et al. 2021a)*;* Cohesion and globalisation: An analysis of trends, future directions and potential missions to address societal challenges in Norway (Gloinson et al. 2021b); Oceans: An analysis of trends, future directions and potential missions to address societal challenges in Norway (Skjoldager et al. 2021b); Green transition: An analysis of trends, future directions and potential missions to address societal challenges in Norway (Skjoldager et al. 2021a); Technology and digitalisation: An analysis of trends, future directions and potential missions to address societal challenges in Norway (d'Angelo et al. 2021); Structural measures to develop a resilient research and innovation environment in Norway (Skjoldager et al. 2021c); Addressing societal challenges in Norway: Key trends, future scenarios, missions and structural measures (Gunashekar et al. 2021a); and Addressing future societal challenges in Norway: Detailed methodology report (Gunashekar et al. 2021b).

1.2. Conceptual framework for the study

Our overall conceptual framework (Figure 2) was targeted at providing a key analytical tool to enable us to carry out a rigorous, detailed and comprehensive futures analysis for the RCN. It is based on a participatory approach involving a range of diverse stakeholders, detailed trend analyses and rigorous scenario planning that contributed to the conceptualisation and achievement of the overarching aims of the study, i.e. to identify a set of potential priority missions related to the RCN's five strategic areas and underlying structural measures to enable the development of a robust, resilient and socially responsible research and innovation environment in Norway.

Figure 2. Conceptual framework for the study



Source: Study team analysis

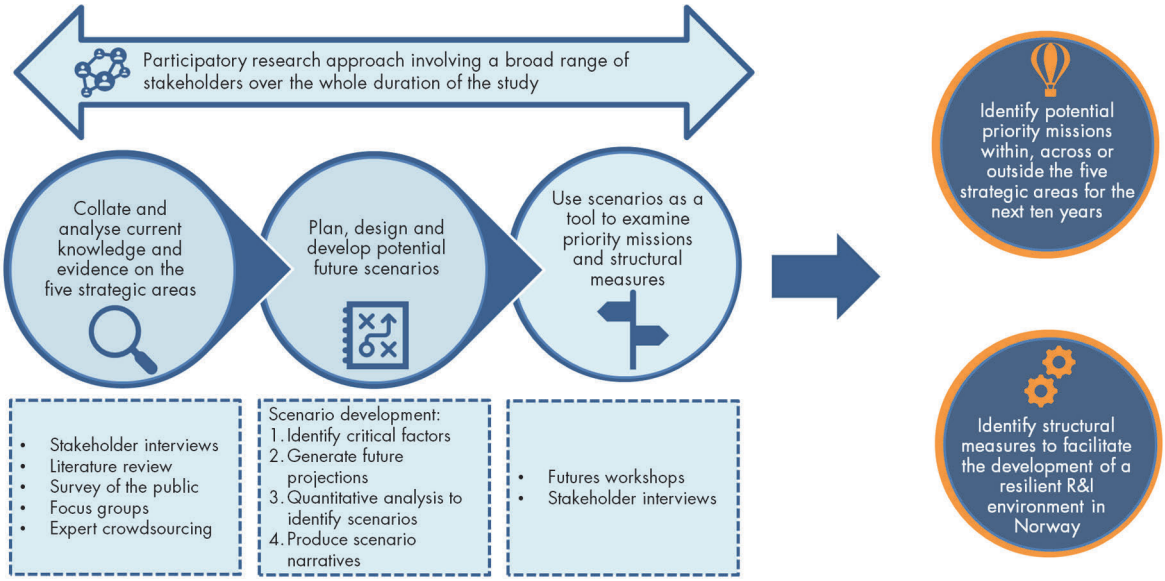
The conceptual framework for the study shown in Figure 2 provides a systems-level view of the various high-level interconnected components of the R&I ecosystem. A series of potentially interconnected drivers (as shown on the left of the figure) can either directly or indirectly influence or cause change in the wider Norwegian R&I system. The system itself is characterised by a series of observable trends or discernible patterns of change relating to the five strategic areas, as illustrated in the middle of the figure. An evidence-based foresight approach to explore a range of plausible futures can help the RCN arrive at decisions 'today' that will potentially mitigate future risks and enable future opportunities to be better anticipated. The conceptual framework therefore illustrates the importance not only of realising benefits for the Norwegian R&I system, but also of managing and mitigating against risks. As shown on the right of the figure, the system is also composed of the main outcomes of interest to the RCN, which are their primary objectives

over the current strategy period (2020–2024) (i.e. sustainable development, ground-breaking research and radical innovation, and restructuring of the business and public sectors). If these outcomes are achieved, this could help realise the RCN's overarching desired outcome of a 'well-functioning research and innovation system'. To accomplish these high-level goals, it is necessary to have a set of policy levers or actions that can help steer the system towards the outcomes of interest. Therefore, identifying and implementing a set of targeted, timebound and challenge-based actions – or priority missions – within and across (or even outside) the RCN's strategic areas could form the basis for recognising concrete focus areas for the future. Furthermore, implementing the missions successfully will require the establishment or improvement – in parallel – of key underpinning structural measures at a systemic level. Thus, a mix of appropriate structural measures, together with a set of carefully developed priority missions – and both involving diverse stakeholders – could help the RCN meet its current objectives and ultimately contribute to enriching lives locally, nationally and internationally.

1.3. Summary of the methodology

This section provides a summary of the research approach and methodology. A detailed description of the methodology is provided in the accompanying methodology report (Gunashekar et al. 2021b). We adopted a mixed-methods, participatory approach to the research to achieve the study objectives, as illustrated in Figure 3. The methods included literature reviews, stakeholder interviews, focus groups, a survey of the public, crowdsourcing ideas and information from experts, future scenario analyses and workshops. Over the course of the study, we engaged with a broad range of stakeholders across academia, government, industry, the not-for-profit sector, the RCN and the public.

Figure 3. High-level overview of our approach to implementing the research

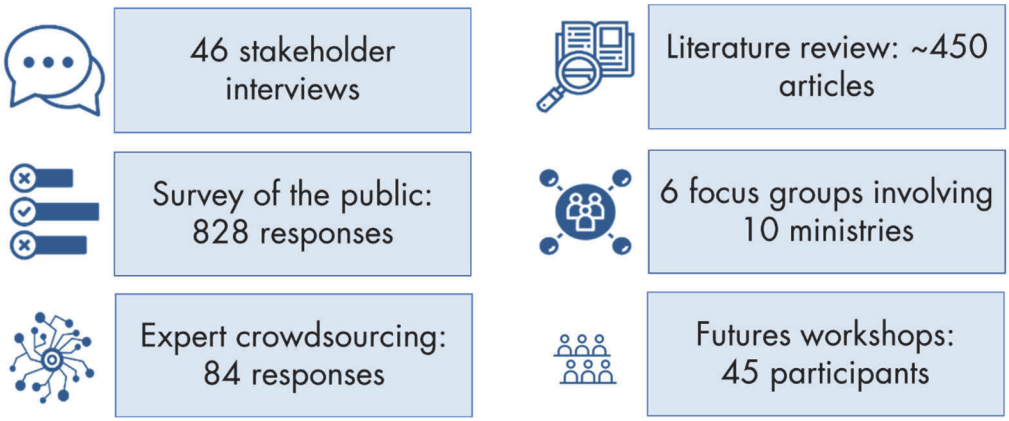


Source: Study team analysis

Trend analyses

As noted in the previous section, each strategic area is characterised by several trends that are shaping developments and driving change within those areas. In the first phase of the study, we carried out a detailed trend analysis for each strategic area, by collecting and analysing wide-ranging evidence to help develop a robust knowledge and information base. The information collected in the trend analysis enabled us to develop a deep and rounded understanding of the status quo and direction of travel within (and outside) the R&I landscape for each strategic area (oceans, green transition, health and welfare, technology and digitalisation, and globalisation and cohesion). Specifically, we identified the main trends, enablers, barriers and uncertainties that will potentially shape the strategic area over the next ten years or so. The trend analyses also directly informed the indicative priority missions[4] and structural measures. The trend analysis synthesised evidence from the main data collection activities, as outlined in Figure 4.

Figure 4. Main data collection activities undertaken in the research



Source: Study team analysis

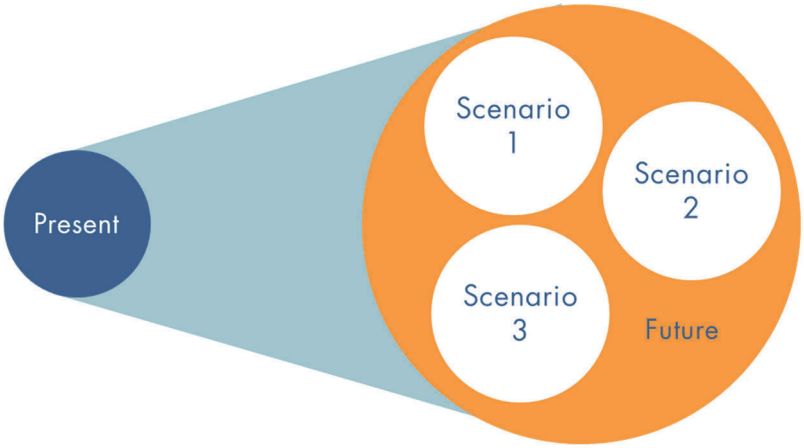
Scenario methodology

In the second phase of the study, we designed and developed plausible future scenarios using the information collected in the trend analyses (Figure 5). Scenarios are stories or narratives that are used to describe the alternative and possible ways in which a situation or environment might develop in the future (Government Office for Science 2017). Within each scenario, there is a complex network of influence factors[5] that shape that future (Gausemeier et al. 1998).

[4] For clarity and ease of reference, we reiterate what we mean by missions in the context of this study. We regard missions as targeted, timebound, concrete priority actions to help solve one or more societal challenges that the RCN, together with other stakeholders, could consider implementing in the future. The missions will help the RCN achieve its overarching objectives (over a roughly ten-year time frame) and eventually contribute to enriching lives locally, nationally and internationally. Further information is provided in Chapter 3 of this report.

[5] In this study, the influence factors have been found based on the trends, barriers, enablers and uncertainties we identified in the trend analyses.

Figure 5. Plausible future scenarios, presenting a wide range of potential future states



To build scenarios of sufficient depth and distinctiveness, we used a rigorous and iterative process that involved the examination of the different factors, enablers, barriers and drivers of change that are shaping developments within, across and outside the five strategic areas. We generated two sets of scenarios by combining different aspects of the five strategic areas (in Figure 5, the orange area represents an exemplar set of three distinct future scenarios). Each scenario set comprised four distinct scenarios based on 15–20 prioritised political, economic, social, technological, legal and environmental (PESTLE) factors from the trend analyses that could influence the strategic areas (specifically, these factors were derived from the trends, enablers, barriers and uncertainties that were identified in the trend analyses). The two scenario sets were as follows:

- **Scenario set 1 (*Norway in a national context*):** The first scenario set broadly focuses on Norway in a national context, largely relating to the Norwegian domestic agenda. This scenario set encompasses health, welfare, education, work and skills, cohesion, and relevant aspects of technology and digitalisation, and it also covers some aspects related to green transition (for example, in relation to the circular economy).
- **Scenario set 2 (*Norway in a global context*):** The second scenario set focuses on Norway in an international or global context, primarily relating to Norway's outward-facing role. It broadly covers themes related to climate, oceans, energy, transport, food, biodiversity, globalisation and relevant aspects of technology and digitalisation.

Examining potential missions and structural measures

The different scenarios facilitate the anticipation of what might happen in the next 20 years and help reflect changes in the R&I system as well as the wider, 'macro' environment. We used the scenario sets as the basis for discussions at two virtual foresight workshops, attended by a total of 45 stakeholders (across academia, industry, the third sector and the RCN). Using the scenarios to represent a range of distinct and plausible future states, workshop participants examined and validated a series of indicative priority missions and discussed potential structural measures. Following the workshops, a set of interviews were conducted with additional stakeholders and further desk research was carried out. The indicative missions and structural measures were further refined and updated based on feedback received at the workshops and on the additional desk research and interviews.

1.3.1. Caveats of the analysis

When reading and interpreting the analyses presented in this report, there are some caveats that need to be considered. The study analyses the trends, future directions, and potential missions regarding the five strategic area of the RCN's current strategy. Some of the strategic areas – notably, cohesion and globalisation, technology and digitalisation, and green transition – are wide-ranging, complex and rapidly evolving areas, both in Norway but also more broadly in a global context. To accomplish the key objectives of the study while implementing the research within the timelines, we have had to keep the research focused on key topics of importance, not aiming for a systematic coverage of all topics. While the areas of focus might not be exhaustive, as outlined in the previous section, we adopted a participatory approach to the study – involving a diverse range of stakeholders – and incorporated a variety of different methods to triangulate the evidence. This has enabled us to cover a wide spectrum of important issues related to the five strategic areas in the context of Norway.

The ideas for the priority missions that we have articulated are not intended to be definitive or exhaustive. Each mission is proposed as an indicative idea at this stage based on the evidence collected during the research. The missions were examined and validated at stakeholder workshops and then further updated based on feedback received at the workshops and from the RCN. The collection of missions that we have presented in this study represent a broad spectrum of ideas for further consideration and exploration by the RCN – and other stakeholders – that might be involved in the process to implement any potential missions in the future.

1.4. Outline of the report

The remainder of the report is structured as follows:

- In Chapter 2, we summarise the two scenario sets and the associated future scenarios we employed at the foresight workshops to examine the indicative missions and structural measures related to the five strategic areas.
- In Chapter 3, we provide a list of indicative priority missions that cut across (or fall outside) the five strategic areas.
- In the Annexes, we present the comprehensive versions of the scenario narratives for both scenario sets and a high-level overview of all the indicative mission ideas that have been articulated within and across the RCN's five strategic areas.

2. Future scenarios to examine potential missions and structural measures

This chapter presents the scenarios (to 2040) that were developed to examine the future of the different strategic areas and the wider R&I system in Norway. It is important to highlight that the scenarios are not intended to be predictions or forecasts of the future. Instead, they represent a range of plausible future states that have been generated using a combination of factors and future projections of the factors that could reasonably occur together. The scenarios represent a wide spectrum of possible futures that are sufficiently differentiated from each other. A summary of the approach to developing and using the scenarios is provided in Section 1.3 and further elaborated upon in the following sections. A detailed description of the methodology used to develop the scenarios is provided in the accompanying methodology report (Gunashekar et al. 2021b).

2.1. Future scenarios to 2040

As noted in Section 1.3, to build scenarios of sufficient depth and distinctiveness, we constructed two scenario sets, by combining various elements associated with the five strategic areas (oceans; green transition; technology and digitalisation; technology and digitalisation; and cohesion and globalisation). Each scenario set comprised four future scenarios based on 15–20 prioritised political, economic, social, technological, legal and environmental (PESTLE) factors from the trend analyses[6] that could influence the strategic areas (specifically, these factors were derived from the trends, enablers, barriers and uncertainties that were identified in the trend analyses).

By having two sets of scenarios, each with a relatively large number of PESTLE factors, we were able to maintain the detail and richness required in the scenarios to support the examination of meaningful missions and policy actions for each of the strategic areas, while at the same time allowing the missions to be set against a broader landscape. Furthermore, with the two sets of scenarios, we were able to effectively deal with the relatively wide-ranging strategic areas of cohesion and globalisation and technology and digitalisation (as well as green transition, to a degree).[7] Below we recap the two scenario sets:

- **Scenario set 1 (*Norway in a national context*):** The first scenario set broadly focuses on Norway in a national context, largely relating to the Norwegian domestic agenda. This scenario set encompasses such themes as health, welfare, education, work and skills, cohesion, and relevant aspects of technology and digitalisation, and it also covers some aspects related to green transition (for example, in relation to the circular economy).
- **Scenario set 2 (*Norway in a global context*):** The second scenario set focuses on Norway in an international or global context, primarily relating to Norway's outward-facing role. It broadly

[6] In the first phase of the study, we carried out a detailed trend analysis for each strategic area, by collecting and analysing wide-ranging evidence to help develop a robust knowledge and information base. Specifically, we identified the main trends, enablers, barriers, and uncertainties that will potentially shape the strategic area over the next ten years or so.

[7] These two strategic areas are very interconnected with different sectors, cut across the other strategic areas, and are inter-related with each other as well.

covers themes related to climate, oceans, energy, transport, food, biodiversity and globalisation, as well as relevant aspects of technology and digitalisation.

As noted above, we developed four distinct future scenarios to 2040 for each scenario set. Because of their cross-cutting and wide-ranging nature, the cohesion and globalisation and the technology and digitalisation strategic areas (and to some extent green transition as well), as well as the corresponding indicative missions, were discussed in relation to both scenario sets.[8] The scenarios were used as methodological tools during two foresight workshops to examine a series of indicative priority missions and discuss ideas for potential structural measures.[9] The workshops were attended by a range of diverse stakeholders from across academia, industry, the third sector and the RCN.

In the sections below, for both scenario sets, we provide the high-level summaries of the corresponding scenarios followed by a figure containing the key characteristics and underpinning factors of the four scenarios. In Annex A, we present more detailed one-page narratives of the scenarios that have been developed.[10]

[8] The other strategic areas are health and welfare and oceans.

[9] The two workshops covering the two scenario sets – Norway in a national context and Norway in a global context – were organised on 23 and 24 March 2021, respectively.

[10] The scenario narratives were shared with the workshop participants in advance of the workshops and were discussed in detail during the workshops.

2.2. Summaries of the scenarios corresponding to future scenario set 1: *Norway in a national context*

As noted previously, different aspects of the cohesion and globalisation, technology and digitalisation, and green transition strategic areas were covered in both scenario sets and were discussed at both workshops (see Annex A for the full scenario narratives).

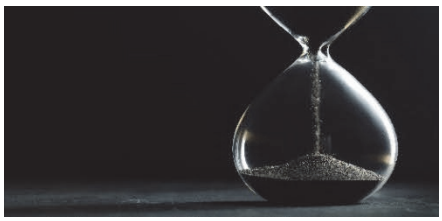
Scenario 1: Protectionist decline

Key storyline: Against a backdrop of global protectionist trends, technology adoption and innovation in Norway's healthcare sector has stalled. Greater national spending on health and welfare has led to some advances in care but has so far failed to deliver a joined-up system. Despite increased growth in some sectors, such as domestic food production, overall productivity growth and labour force participation are low and trust in public institutions is declining.

Scenario 2: Going green together

Key storyline: Sustainability, an inclusive society and local delivery of services are now at the core of Norway's approach. Healthcare has been decentralised, and, in common with other sectors, targeted use of technology is seen as a way to improve efficiency and reduce waste. There has also been a focus on education and digital competence to reduce social inequalities. Open science has been key to the success of green initiatives at the national and local level, from green builds and urban farms, as city living remains popular.

Scenario 3: Slowly changing society



Key storyline: Norway has experienced only gradual change over the past several years. There has been some success in the healthcare sector in responding to more complex needs of a changing population, compounded by the effects of climate change. But limited interdisciplinary collaboration and cooperation with industry, as well as a lack of vision on green initiatives, give rise to concerns that Norway will not have the necessary skills to adapt to future changes in the national and global landscape.

Scenario 4: Technological trajectory

Key storyline: Norway has focused on technological advances to promote economic growth and support its sustainability goals. Digital solutions have been extensively integrated into healthcare. Most Norwegians have internet access, but digital literacy and a willingness to share data are prerequisites for participation in many activities. The technological transformation of employment has also meant many Norwegians have been able to move out of cities to escape effects of climate change.

Figure 6. Key characteristics and underpinning factors of the four scenarios associated with scenario set 1 *(Norway in a national context)*

		Protectionist decline	Going green together	Slowly changing society	Technological trajectory
Health and welfare	Demand and access to health and welfare services	↔	↑	↔	↔
	Collaboration and interdisciplinarity	↓	↑	↔	↑
	Development and adoption of telemedicine and telecare	↔	↑	↔	↑
Economy and society	Discrimination and hate speech	↑	↓	↔	↔
	Use of social media to spread disinformation	Increasingly used, with impact on the spread of misinformation	Increasingly used, but little impact on misinformation	Increasingly used, with impact on the spread of misinformation	Increasingly used, with impact on the spread of misinformation
	Trust in public administration	↓	↑	↔	↔
	Net immigration	↔	↓	↔	↔
	Natural resource wealth	Slow growth or stagnation	Steady growth, with greater share from sustainable sources	Steady growth, but no change in share from sustainable sources	Steady growth, but no change in share from sustainable sources
Location of jobs and housing and greening initiatives	Skilled labour availability to match employment demand	↓	↑	↔	↑
	Location of jobs and housing	More dispersion with mixed transport links	Continued trend for jobs to be located in large cities and transport-friendly locations	Continued trend for jobs to be located in large cities and transport-friendly locations	More dispersion with mixed transport links
	Ability of Norway to adapt to environmental change	↔	↑	↔	↑
	Circular infrastructure for energy, water and waste supply	Focussed on current approaches	Develop rapidly and are implemented at national, regional and local levels	Rapid development, but implementation is localised	Rapid development, but implementation is localised
Technology, digital skills and digital threats	Digital skills	Digital divide increases	Digital skills increase, digital divide decreases	Digital skills and digital divide remains as now	Digital divide increases
	Digital security and cyber security protection	Norway is unable to respond, digital and cyber security threats demand increase protection	Norway is better able to respond, decreasing digital and cyber security threats	Norway is unable to respond, digital and cyber security threats demand increase protection	Norway is better able to respond, decreasing digital and cyber security threats
	Data sharing	↓	↑	↑	↑
	Technology convergence and use of enabling technologies	↓	↑	↔	↑
Research and innovation	Globalisation of research and innovation and data sharing	Decrease in international data sharing and collaboration	Increasing international data sharing and collaboration (open and distributed)	Increasing international collaboration and data sharing (closed)	Increasing international data sharing and collaboration (open and distributed)
	Funding for research and innovation	Decreases	Sufficient and continuous for different actors	Fragmentation	Sufficient and continuous for different actors

Source: Study team analysis

2.3. Summaries of the four scenarios corresponding to future scenario set 2: *Norway in a global context*

As noted previously, different aspects of the cohesion and globalisation, technology and digitalisation, and green transition strategic areas were covered in both scenario sets and were discussed at both workshops (see Annex A for the full scenario narratives).

Scenario 1: Protectionist decline

Key storyline: Political instability has led to a poorly performing global economy and protectionist attitudes towards trade and research and innovation. Even within Norway, there has been little progress so far on initiatives to green the economy, which continues to focus on developing the oceans.

Scenario 2: Global greening

Key storyline: Products and services that have a low impact on the environment and climate are now central to the global economy. Change is being achieved through government-, industry- and consumer-led initiatives, with Norway at the forefront of all of these. There has been a focus on ensuring openness and transparency of research, seen as key to a green future.

Scenario 3: Slowly shifting power

Key storyline: A lack of clear international vision has resulted in slow progress by 2040 on both climate change goals and transformational change from technology convergence, as research remains fragmented. Global trading pattern relationships reflect the steady drift of economic power away from the west, while melting ice in the High North has created commercial opportunities and tensions for Norway.

Technological trajectory

Key storyline: By 2040, technology is all-pervasive: a key driver of economic growth, changing the nature of employment for many and impacting on daily life. Technological advances have not delivered on climate change goals and continue to be resource intensive. Norway is increasingly looking to new international partners for trade and research collaboration.

Figure 7. Key characteristics and underpinning factors of the four scenarios associated with scenario set 2 *(Norway in a global context)*

		Protectionist decline	Global greening	Slowly shifting power	Technological trajectory
Green transition	Demand and support for circular products	↓	↑	↓	↔
	Circular infrastructure for energy, water and waste supply	Circular economy remain focussed on current approaches to water/energy/waste	Circular initiatives develop rapidly and implemented at national, regional and local levels	Circular economy remain focussed on current approaches to water/energy/waste	There is rapid development in circular initiatives, but implementation remains localised
	Investments/innovations to reduce emissions from oil	↓	↑	↔	↔
	Ability of Norway to adapt to climate change	↓	↑	↓	↓
	Food security and supply	Norway maintains security of food supply with higher share of domestic production	Norway maintains security of food supply with higher share of domestic production	Norway maintains security of food supply with same share of productions as now	Norway maintains security of food supply with same share of productions as now
	Low-carbon business models (international)	No change in emergence	Rapid emergence	No change in emergence	Emergence in some sectors
Oceans	Sustainable aquaculture	Little expansion in aquaculture sector	Expanded aquaculture sector with expanded share of sustainable farming	Expanded aquaculture sector with expanded share of sustainable farming	Expanded aquaculture sector but no increase in share of sustainable farming
	Norwegian shipping industry	Greening of international shipping industry remains as now	Greening of international shipping industry is extensive	Greening of international shipping industry remains as now	Greening of the shipping industry increases
Globalisation and society	Norway's trade linkages with other countries	↓	↑	↔	↑
	Norwegian co-operation with EU/EEA	↓	↑	↔	↑
	Natural resource wealth	Slow growth or stagnation	Steady growth, with greater share from sustainable sources	Steady growth, but no change in share from sustainable sources	Steady growth, but no change in share from sustainable sources
	Make up of geopolitical landscape	Less stable with a shift in global power	More stable with greater cooperation with and stability in Norway's partner countries	No change in stability of the geopolitical landscape	No change in the stability of the geopolitical landscape
	Natural resource wealth	Slow growth or stagnation in the economy	Steady growth in Norway's wealth with a greater share from sustainable sources	Steady growth in Norway's wealth, but no change in the share from sustainable sources	Steady growth in Norway's wealth, but no change in the share from sustainable sources
	Skilled labour availability (to match employment demand)	↓	↑	↔	↑
	Technology convergence and the use of enabling technologies	↓	↑	↔	↑
Research and innovation	Globalisation of research and innovation and data sharing	Decrease in international data sharing and collaboration	Increasing international data sharing and collaboration (open and distributed)	Increasing international collaboration and data sharing (closed)	Increasing international data sharing and collaboration (open and distributed)
	Funding for research and innovation	Decreases	Sufficient and continuous for different actors	Fragmentation	Sufficient and continuous for different actors

Source: Study team analysis

3. Indicative priority missions cutting across the RCN's five main strategic areas

As noted previously, a set of policy levers or actions will be required by the RCN to help steer the R&I system towards its main outcome of interest (i.e. achieving a 'well-functioning research and innovation system') through its three overarching objectives for the current strategy period (i.e. ground-breaking research and radical innovation; sustainable development; and restructuring of the business and public sectors) (Research Council of Norway 2020). Developing a series of strategically selected priority missions – within and across (or even outside) the RCN's five strategic areas – that could potentially be implemented over the next few years could help contribute to this. For this study, we regard missions as targeted, timebound, concrete priority actions to help solve one or more societal challenges that the RCN together with other stakeholders could consider implementing in the future. These challenge-based missions will help the RCN achieve its overarching objectives (over a roughly ten-year time frame) and eventually contribute to enriching lives locally, nationally and internationally. More generally, missions are systemic policies that both operate as a means of steering economic growth in a particular direction (by, for example, steering investments towards particular societal challenges) and as a tool that can be used to get there (by, for example, setting clear problem-focused objectives) (Mazzucato 2018). Because missions are so closely connected to societal challenges, public purpose and societal impact lie at the heart of missions. They also aim to generate innovation across sectors, actors and disciplines, and enable bottom-up solutions and experimentation across multiple sectors. Missions are challenges that cannot be solved by a single project in research and innovation, but rather require a portfolio of interacting projects as well as the implementation of wider policy measures.

In the sections below, we present a set of indicative priority missions that cut across (and/or fall outside) the five strategic areas (oceans; green transition; health and welfare; technology and digitalisation; and cohesion and globalisation). Missions, in general, cover numerous areas and sectors, and the cross-cutting missions we propose below are particularly comprehensive and could be relevant to all five strategic areas and potentially other areas of R&I as well (see Figure 8 for an illustration of the high-level links between the proposed missions and the five strategic areas). Nevertheless, some of the mission ideas we have suggested might be more relevant and strongly associated to certain strategic areas as the trends and drivers of change associated with these missions are relatively more applicable to those strategic areas. This is particularly the case for the indicative missions that are related to the wide-ranging technology and digitalisation, cohesion and globalisation, and green transition strategic areas. Accordingly, the indicative missions that we have presented in this report have also been discussed in the relevant companion strategic areas reports (Gloinson et al. 2021a; Gloinson et al. 2021b; Skjoldager et al. 2021a; Skjoldager et al 2021b; d'Angelo et al. 2021).

Figure 8. Illustration of links between the cross-cutting indicative missions and the RCN's five strategic areas based on the evidence collected in the respective trend analyses and stakeholder engagement over the course of the study

	Primary links to the RCN strategic area and other areas of research and innovation					
	Technology and digitalisation	Cohesion and globalisation	Green transition	Oceans	Health and welfare	Other areas of R&I
Cross-cutting priority mission 1: *Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce*	✓	✓	✓	✓	✓	✓
Cross-cutting priority mission 2: *Actively enable digital transformation at all levels of government in Norway*	✓	✓	✓	✓	✓	✓
Cross-cutting priority mission 3: *Ensure decent work for all people in Norway*	✓	✓	✓	✓	✓	✓
Cross-cutting priority mission 4: *Actively contribute to healthy, safe and sustainable food systems*	✓	✓	✓		✓	✓
Cross-cutting priority mission 5: *Play a leading role in Norway and internationally to substantially increase the use of renewable energy in a sustainable and long-lasting manner and accelerate R&I in this area*	✓	✓	✓			✓
Cross-cutting priority mission 6: *Establish a resilient and sustainable blue economy in Norway*		✓	✓	✓		✓
Cross-cutting priority mission 7: *Position Norway as a global leader in combating marine pollution and establish a Norwegian ecosystem free of marine pollution*		✓	✓	✓		✓
Cross-cutting priority mission 8: *Enhance Norway's world leading capabilities and expertise in future maritime technologies*	✓		✓	✓		✓

Source: Study team analysis

Drawing on information collected during the trend analyses and expert inputs throughout the study, the mission ideas have been proposed, as far as possible, in areas where Norway has competitive advantages;

where its institutional capacities and capabilities are strong; and where national, social, economic or environmental challenges are critical – nationally and, where relevant, internationally. In the context of this report, several of the trends and drivers of change we identified in the evidence base for the five strategic areas were cross-cutting in nature. These often spanned two or more strategic areas as well as other areas of R&I (for example, trends related to skills, the nature of work, the impact of wider digitalisation, and the role of renewable energy). This enabled us to articulate a series of indicative cross-cutting missions that are intentionally comprehensive and could apply horizontally to several (and in some cases all the) strategic areas and potentially to other areas of R&I as well (Figure 8). Furthermore, the stakeholder interviews, crowdsourcing exercise and futures workshops provided us with ideas and inspiration for some missions that fell slightly outside the direct remit of the five strategic areas (although it is worth noting that given the wide-ranging nature and scope of the five strategic areas, there are clearly links that could be drawn between these 'other' missions and the strategic areas).

The priority mission ideas we have highlighted are not intended to be definitive and are proposed as indicative ideas at this stage based on the analysis of the evidence gathered. They represent a broad spectrum of ideas for further consideration and exploration by the RCN and other stakeholders that might be involved in the process to implement potential missions in Norway in the future. Some mission ideas are wide-ranging and as noted above, cover one or more other strategic areas while others are more specific. Furthermore, some missions overlap and interact with other missions. All the missions will require an active, multi-stakeholder approach in order to be implemented and are cross-cutting in terms of sectors and disciplines involved. In general, their implementation will also need to effectively incorporate relevant social sciences, humanities, legal and ethical perspectives. Finally, the missions must engage the public regularly and be evaluated against a set of clearly defined criteria set out upfront.

A preliminary set of priority missions and associated focus areas were discussed and validated by stakeholders (across academia, industry, the third sector and the RCN) at two foresight workshops to understand their implications (for example, in terms of impact and feasibility) against the RCN's objectives across the different futures exemplified in the scenarios.[11] As noted previously, because of their wide-ranging and cross-cutting nature, some of the indicative missions for cohesion and globalisation and technology and digitalisation as well as other relevant aspects of this strategic area were discussed at both workshops. We also tested the mission ideas in interviews with a selection of stakeholders from academia, industry, the third sector and the public sector. Following the workshops, the indicative missions were refined based on feedback received at the workshops and from the RCN.

For each indicative mission presented below, we have also suggested a selection of potential targeted focus areas, in addition to highlighting broad links to the United Nations (UN) Sustainable Development Goals (SDGs) (United Nations 2021),[12] the clusters under Pillar II of Horizon Europe (European Commission

[11] The two workshops covering the two scenario sets – Norway in a national context and Norway in a global context – were organised on 23 and 24 March 2021, respectively.

[12] The UN SDGs are: SDG1: No Poverty; SDG2: Zero Hunger; SDG3: Good Health and Well-being; SDG4: Quality Education; SDG5: Gender Equality; SDG6: Clean Water and Sanitation; SDG7: Affordable and Clean Energy; SDG8: Decent Work and Economic Growth; SDG9: Industry, Innovation and Infrastructure; SDG10: Reduced Inequalities; SDG11: Sustainable Cities and Communities; SDG12: Responsible Consumption and Production; SDG13: Climate Action; SDG14: Life Below Water; SDG15: Life on Land; SDG16: Peace, Justice and Strong Institutions; and SDG17: Partnerships for the Goals.

2021a), [13] and other EU missions identified in Horizon Europe (European Commission 2021b).[14] The focus areas[15] are exemplar and are not intended to be definitive; rather they represent a range of potential areas of emphasis in relation to the missions for further consideration by the RCN and other stakeholders. It is important to note that each of the target focus areas presented below will need to be eventually specified with clear, measurable and timebound goals, arrived at by the stakeholders involved in selecting and implementing the missions.

Finally, it is worth reiterating that the priority missions will need to be developed and built on top of a set of robust and co-ordinated structural measures in the Norwegian R&I environment. Structural measures will address the performance of the Norwegian R&I system in terms of the three overarching objectives of the RCN for the current strategy period. Establishing new and/or strengthening existing underpinning structural measures will enable the development of a resilient, inclusive and thriving R&I environment in Norway within which the missions can be effectively and efficiently implemented in the future. We have proposed a series of potential structural measures in an accompanying report (Skjoldager et al. 2021c).

In Box 1 below, we summarise the indicative missions (and corresponding exemplar targeted focus areas) cutting across the RCN's five strategic areas and from Section 3.1.1 onwards, we present details of the missions using a standard template (in Box 2, we provide a key to the missions template). In Annex B, we present an infographic that provides a high-level overview of *all* the indicative mission ideas that have been articulated within and across the RCN's five strategic areas.

[13] The Horizon Europe Clusters under Pillar II includes: (1): Health; (2): Culture, Creativity and Inclusive Society; (3): Civil Security for Society; (4): Digital, Industry and Space; (5): Climate, Energy and Mobility; and (6): Food, Bioeconomy, Natural Resources, Agriculture and Environment.

[14] Five EU mission areas have currently been proposed as part of Horizon Europe: (i) Conquering Cancer: Mission Possible; (ii) A Climate Resilient Europe – Prepare Europe for climate disruptions and accelerate the transformation to a climate resilient and just Europe by 2030; (iii) Mission Starfish 2030: Restore our Ocean and Waters; (iv) 100 Climate-Neutral Cities by 2030 – by and for the citizens; and (v) Caring for Soil is Caring for Life.

[15] To varying degrees, the missions and focus areas capture evidence analysed during the trend analyses. Specifically, we analysed the key trends, barriers, enablers and uncertainties identified in the trend analysis to suggest potential areas of focus for each priority mission.

Box 1. Summary of indicative missions and corresponding exemplar targeted focus areas cutting across (or falling outside) the RCN's five strategic areas

- ***Indicative mission 1:*** **Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce**
  Exemplar targeted focus areas: Progressively reduce and eliminate the shortage in advanced digital and soft skills, training and competencies, to enable people to work in and adapt to the rapidly evolving digital economy in Norway and globally (including upskilling and reskilling workers); and lead the way and demonstrate knowledge leadership in ensuring equal opportunities, eliminating disparities and overcoming bias and systemic barriers for all segments of the population working in the digital economy (e.g. women, minority ethnic communities, older people, the young workforce, disabled people).
- ***Indicative mission 2:*** **Actively enable digital transformation at all levels of government in Norway**
  Exemplar targeted focus areas: Make better and more responsible use of a range of digital technologies, data and platforms as enablers of public services at both local and national level (to deliver more targeted, inclusive and user-centric services); improve operations, work processes, productivity, user experience, accountability, and transparency (and reduce risks); promote activities and behaviours that involve the responsible use of data and evidence to inform decision making; proactively focus on workforce development related to developing and maintaining skills (digital and soft); and promote cooperation/collaboration within and across ministries/municipalities and with other stakeholders (including the private sector) (e.g. to share learnings, to share good practice, to build capacity).
- ***Indicative mission 3:*** **Ensure decent work for all people in Norway**
  Exemplar targeted focus areas: Promote and accelerate inclusive, diverse and decent work for all people in Norway across all segments of the population (including integration of immigrants into the labour market); increase youth employment; improve quality of work, working conditions, job satisfaction, etc.; ensure equal access; and achieve productive employment for the Norwegian workforce that can adapt to digitalisation/automation.
- ***Indicative mission 4:*** **Actively contribute to healthy, safe and sustainable food systems**
  Exemplar targeted focus areas: Increase sustainable, climate-resilient food production – nationally and globally; increase access to safe and healthy food while reducing food waste and loss; ensure that food production systems can provide food to improve quality of life and health; stimulate innovations/technology development and adoption to accelerate the transformation of food systems (e.g. in relation to improving productivity, supply chain efficiency and transparency); actively position Norway as an international thought and knowledge leader with regard to effective food systems governance; and promote international cooperation (e.g. in relation to R&D, agricultural practices) between stakeholders to stimulate the creation of economically, socially and environmentally sustainable food systems.
- ***Indicative mission 5:*** **Play a leading role in Norway and internationally to substantially increase the use of renewable energy in a sustainable and long-lasting manner and accelerate R&I in this area**
  Exemplar targeted focus areas: Improve energy security by substituting fossil fuels with renewable sources across all sectors; improve access to modern, reliable and cost-effective clean energy sources across all segments of the population; substantially improve energy efficiency (e.g. in the built environment); accelerate R&I and increase public and private sector investment in renewable energy infrastructure and technology; mobilise knowledge exchange and cross-sectoral/international collaboration (e.g. to share lessons, reduce duplication); and provide thought leadership to help improve awareness and understanding.

- *Indicative mission 6*: Establish a resilient and sustainable blue economy in Norway
  Exemplar targeted focus areas: Increase the sustainable use of ocean-based resources to achieve economic growth in Norway; preserve (and improve) the health of the coastal and marine environment around Norway; actively invest in ocean mapping and ocean management programmes; strengthen Norway's (international) position and expertise with regard to ocean ecosystems (including ocean governance); put Norway at the forefront of R&I activities associated with key sectors of strength (such as aquaculture, fisheries, petroleum and shipping); minimise the impacts of ocean acidification; examine and invest in opportunities for offshore renewable energy to enable coastal and maritime markets in the long-term; actively support efforts to promote oceans as a sustainable and safe source of food; ensure the inclusion and active participation of all societal groups.
- *Indicative mission 7:* Position Norway as a global leader in combating marine pollution and establish a Norwegian ocean ecosystem free of marine pollution
  Exemplar targeted focus areas: Leverage Norway's world-leading ocean management capabilities and expertise to substantially reduce the amount of marine pollution and hazardous substances (including plastics) entering the ocean environment around Norway (including that arising from land-based activities); remove/clean up marine pollutants (including plastics) that are already present in the ocean; spearhead international efforts in reducing global marine pollution; reduce greenhouse gas emissions from marine activities such as domestic shipping and fisheries
- *Indicative mission 8:* Enhance Norway's world-leading capabilities and expertise in future maritime technologies
  Exemplar targeted focus areas: Put Norway at the forefront of successfully developing, deploying and scaling up a range of innovative, clean technology solutions applicable to the marine environment around Norway; responsibly use data to inform ocean management–related decision making; strengthen Norway's position as an international leader in green shipping; position Norway as a global leader in leveraging the opportunities offered by maritime technologies while addressing the risks and challenges associated with deploying these technologies; and actively promote cooperation (regional and international) between relevant stakeholders in this area.

Box 2. Key to the mission templates presented below

- **Key challenges that the mission aims to address:** Details some of the challenges that the mission will contribute to addressing.
- **Exemplar targeted focus areas:** Lists a selection of potential targeted focus areas for the mission. Implementing the priority missions will require the design and implementation of a portfolio of diverse projects involving multiple stakeholders, ideally, as noted previously, in areas where Norway demonstrates strengths and has competitive advantages. The exemplar targeted focus areas could be used to inform the development of potential R&I projects. Furthermore, it is important to note that each of the target focus areas will need to be specified with clear, measurable and timebound goals that are decided by the stakeholders involved in implementing the mission.
- **Links to the RCN strategic areas:** Specifies the links to the strategic area(s) identified in the RCN's current strategy for the next ten years (Research Council of Norway 2020a).
- **Links to UN Sustainable development goals (SDGs):** Specifies the UN SDG(s) that the priority mission is linked to (United Nations 2021).
- **Links to clusters of Horizon Europe's Global Challenges pillar (Pillar II):** Specifies the cluster(s) within Pillar II of Horizon Europe) (Global Challenges and European Industrial Competitiveness) that the mission is linked to (European Commission 2021a).
- **Intersection with other priority missions:** Specifies the other indicative priority mission(s) that the priority mission is interconnected with.
- **Involvement of key stakeholders:** Implementing this priority mission will require targeted research, innovation and investment from the RCN and other potential stakeholders (e.g. the public sector; the private sector and industry; civil society organisations; citizens). Importantly, it will also necessitate catalysing active cooperation and collaboration among these diverse stakeholders (including public engagement). In this section, we list some of these potential key stakeholders.

3.1.1. Priority mission area 1: Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce

<table>
<tr><th colspan="2">Key challenges that the mission aims to address</th></tr>
<tr><td colspan="2">• Ensuring that the education systems adapts to developments in the digital economy;
• Filling skills gaps in key industries, including (but not limited to) healthcare, financial services and retail;
• Ensuring the effective use of skills;
• Ensuring the active supply of skills;
• Contributing to the governance arrangements of Norway's skills system;
• Engaging stakeholders in the entire policy cycle; and
• Building integrated information systems.</td></tr>
<tr><th colspan="2">Exemplar targeted focus areas</th></tr>
<tr><td colspan="2">• Progressively reduce and eliminate the shortage in advanced digital and soft skills, training and competencies, to enable people to work in and adapt to the rapidly evolving digital economy in Norway and globally (including upskilling and reskilling workers); and
• Lead the way and demonstrate knowledge leadership in ensuring equal opportunities, eliminating disparities and overcoming bias and systemic barriers for all segments of the population working in the digital economy (e.g. women, minority ethnic communities, older people, the young workforce, disabled people).</td></tr>
<tr><th>Links to RCN Strategic Areas</th><th>Links to UN SDGs</th></tr>
<tr><td>• Technology and digitalisation (primary link)
• Cohesion and globalisation
• Health and welfare
• Oceans
• Green transition</td><td>• SDG 4: Quality Education
• SDG 5: Gender Equality
• SDG 8: Decent Work and Economic Growth
• SDG 9: Industry, Innovation and Infrastructure
• SDG 16: Peace, Justice and Strong Institutions</td></tr>
<tr><th>Links to clusters of Horizon Europe's Global Challenges pillar</th><th>Links to EU mission areas identified in Horizon Europe</th></tr>
<tr><td>• Culture, Creativity and Inclusive Society
• Digital, Industry and Space</td><td>• Conquering Cancer: Mission Possible
• A Climate Resilient Europe – Prepare Europe for Climate Disruptions and Accelerate the Transformation to a Climate Resilient and Just Europe by 2030
• Mission Starfish 2030: Restore our Ocean and Waters
• 100 Climate-Neutral Cities by 2030 – By and for the Citizens
• Caring for Soil Is Caring for Life</td></tr>
<tr><th colspan="2">Intersection with other priority mission(s) identified in this study</th></tr>
<tr><td colspan="2">All indicative priority missions</td></tr>
<tr><th colspan="2">Involvement of key stakeholders</th></tr>
<tr><td colspan="2">• All sectors
• Norwegian higher education institutions and research organisations
• Norwegian national agencies (e.g. Ministry of Labour and Social Affairs, Ministry of Local Government and Modernisation, Ministry of Education and Research, Sami Parliament, Industrial Development Corporation of Norway)
• International organisations (e.g. United Nations, World Bank, OECD, European Commission, World Economic Forum)
• Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations)
• Research Council of Norway and Innovation Norway</td></tr>
</table>

3.1.2. Priority mission area 2: Actively enable digital transformation at all levels of government in Norway

Key challenges that the mission aims to address	
• Countering the fragmented implementation of digital technologies across the public sector; • Providing key institutional actors with the means to promote the use of common guidelines, standards and digital solutions in different policy sectors; • Responding to changing citizen and business needs and expectations; • Strengthen coordination and synergies with local government; • Increasing the priority assigned to the development of digital and data-related leadership and skills; and • Simplifying and streamlining data-sharing practices.	
Exemplar targeted focus areas	
• Make better and more responsible use of a range of digital technologies, data and platforms as enablers of public services at both local and national level (to deliver more targeted, inclusive and user-centric services); • Improve operations, work processes, productivity, user experience, accountability and transparency (and reduce risks); • Promote activities and behaviours that involve the responsible use of data and evidence to inform decision making; • Proactively focus on workforce development related to developing and maintaining skills (digital and soft); and • Promote cooperation/collaboration within and across ministries/municipalities and with other stakeholders (including the private sector) (e.g. to share learnings, to share good practice, to build capacity).	
Links to RCN Strategic Areas	**Links to UN SDGs**
• Technology and digitalisation (primary link) • Cohesion and globalisation • Health and welfare • Oceans • Green transition	• SDG 4: Quality Education • SDG 9: Industry, Innovation and Infrastructure • SDG 16: Peace, Justice and Strong Institutions
Links to clusters of Horizon Europe's Global Challenges pillar	**Links to EU mission areas identified in Horizon Europe**
• Culture, Creativity and Inclusive Society • Digital, Industry and Space	• Conquering Cancer: Mission Possible • A Climate Resilient Europe – Prepare Europe for Climate Disruptions and Accelerate the Transformation to a Climate Resilient and Just Europe by 2030 • Mission Starfish 2030: Restore our Ocean and Waters • 100 Climate-Neutral Cities by 2030 – By and for the Citizens • Caring for Soil Is Caring for Life
Intersection with other priority mission(s) identified in this study	
All indicative priority missions	
Involvement of key stakeholders	
• All sectors • Norwegian higher education institutions and research organisations • Norwegian national agencies (e.g. Difi – Agency for Public Management and eGovernment, Norwegian Association of Local and Regional Authorities, Ministry of Local Government and Modernisation, Ministry of Finance, Ministry of Research and Education, Agency for Financial Management, Industrial Development Corporation of Norway) • International organisations (e.g. United Nations, World Bank, OECD, European Commission, World Economic Forum) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations) • Research Council of Norway and Innovation Norway	

3.1.3. Priority mission area 3: Ensure decent work for all people in Norway

Key challenges that the mission aims to address	
• Increasing youth employment; • Improving integration of immigrants into the labour market; • Improving aspects of work, such as quality of work, working conditions, job satisfaction; • Improving equal access to the employment market; and • Improving productive employment.	
Exemplar targeted focus areas	
• Promote and accelerate inclusive, diverse and decent work for all people in Norway across all segments of the population (including integration of immigrants into the labour market); • Increase youth employment; • Improve quality of work, working conditions, job satisfaction, etc.; • Ensure equal access; and • Achieve productive employment for the Norwegian workforce that can adapt to digitalisation/automation.	
Links to RCN Strategic Areas	**Links to UN SDGs**
• Cohesion and globalisation (primary link) • Health and welfare • Oceans • Green transition • Technology and digitalisation	• SDG 4: Quality Education • SDG 8: Decent Work and Economic Growth
Links to clusters of Horizon Europe's Global Challenges pillar	**Links to EU mission areas identified in Horizon Europe**
• Culture, Creativity, and Inclusive Society	• A Climate Resilient Europe – Prepare Europe for Climate Disruptions and Accelerate the Transformation to a Climate Resilient and Just Europe by 2030
Intersection with other priority mission(s) identified in this study	
• Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce	
Involvement of key stakeholders	
• All sectors • Norwegian higher education institutions and research organisations • International organisations (e.g. World Bank, International Labour Organisation, European Commission, OECD, United Nations Development Programme, International Organisation of Employers) • National government agencies (Ministry of Research and Education, Ministry of Labour and Social Affairs, Norwegian Labour and Welfare Administration, Ministry of Children and Families, Industrial Development Corporation of Norway) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations) • Research Council of Norway and Innovation Norway	

3.1.4. Priority mission area 4: Actively contribute to healthy, safe and sustainable food systems

Key challenges that the mission aims to address	
• Improving ecological farming; • Improving sustainable food movements; • Increasing the number of innovative solutions (e.g. local food systems, producer cooperatives, calculators of food footprints); • Improving the sustainability of fish farming; • Improving knowledge among consumers and the food retail sectors; • Improving the safeguarding of water, soil and air quality, while minimising greenhouse gas emissions; and • Reducing food loss and waste.	
Exemplar targeted focus areas	
• Increase sustainable, climate-resilient food production – nationally and globally; • Increase access to safe and healthy food while reducing food waste and loss • Ensure that food production systems can provide food to improve quality of life and health; • Stimulate innovations/technology development and adoption to accelerate the transformation of food systems (e.g. in relation to improving productivity, supply chain efficiency and transparency); • Actively position Norway as an international thought and knowledge leader with regard to effective food systems governance; and • Promote international cooperation (e.g. in relation to R&D, agricultural practices) between stakeholders to stimulate the creation of economically, socially and environmentally sustainable food systems.	
Links to RCN Strategic Areas	• **Links to UN SDGs**
• Green transition (primary link) • Health and welfare • Technology and digitalisation	• SDG 2: Zero Hunger • SDG 3: Good Health and Well-being • SDG 6: Clean Water and Sanitation • SDG 12: Responsible Consumption and Production • SDG 13: Climate Action
Links to clusters of Horizon Europe's Global Challenges pillar	**Links to EU mission areas identified in Horizon Europe**
• Health • Food, Bioeconomy, Natural Resources, Agriculture and Environment	• Caring for Soil Is Caring for Life
Intersection with other priority mission(s) identified in this study	
• Actively address the impacts of non-communicable diseases in Norway • Protect, value and restore Norwegian biodiversity and reduce its degradation and loss • Play a leading role in tackling antimicrobial resistance (in Norway and globally) and actively share expertise • Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce • Actively enable digital transformation at all levels of government in Norway	
Involvement of key stakeholders	
• Sectors (e.g. retailers, farmers, fish farming, seafood, health, environment, public, leisure) • Norwegian higher education institutions and research organisations • International organisations (e.g. Food and Agricultural Organization of the United Nations, International Fund for Agricultural Development, World Food Programme, World Health Organisation, OECD) • National government agencies (Norwegian Farmer's Union, Ministry of Agriculture and Food, Norwegian Food Safety Authority, Ministry of Climate and Environment, Ministry of Foreign Affairs, Ministry of Justice and Public Security, Industrial Development Corporation of Norway) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations, Miljøagentene, Norges Naturvernforbund, Norsk Friluftsliv, Natur og Ungdom) • Research Council of Norway and Innovation Norway	

3.1.5. Priority mission area 5: Play a leading role in Norway and internationally to substantially increase the use of renewable energy in a sustainable and long-lasting manner and accelerate R&I in this area

Key challenges that the mission aims to address
• Increasing the percentage of electricity production that comes from renewable energy sources; • Making all new passenger cars and light vans zero-emissions vehicles and make buses and lorries emissions free; • Improving reuse, recycle and repurpose strategies across different sectors; • Improving and creating a fluctuating renewable energy supply; • Increasing investment in (for example) solar panels, hydropower and wind parks; • Improving tenant electricity models, car sharing, bicycle schemes and home storage systems; and • Improving the smart grid and solutions for flexibility and integration of different power systems where renewables can dominate
Exemplar targeted focus areas
• Improve energy security by substituting fossil fuels with renewable sources across all sectors; • Improve access to modern, reliable and cost-effective clean energy sources across all segments of the population; substantially improve energy efficiency (e.g. in the built environment); • Accelerate R&I and increase public and private sector investment in renewable energy infrastructure and technology; • Mobilise knowledge exchange and cross-sectoral/international collaboration (e.g. to share lessons, reduce duplication); and • Provide thought leadership to help improve awareness and understanding.

Links to RCN Strategic Areas	Links to UN SDGs
• Green transition (primary link) • Cohesion and globalisation • Technology and digitalisation	• SDG 7: Affordable and Clean Energy • SDG 9: Industry, Innovation and Infrastructure • SDG 13: Climate action
Links to clusters of Horizon Europe's Global Challenges pillar	**Links to EU mission areas identified in Horizon Europe**
• Climate, Energy and Mobility	• A Climate Resilient Europe – Prepare Europe for Climate Disruptions and Accelerate the Transformation to a Climate Resilient and Just Europe by 2030 • 100 Climate-Neutral Cities by 2030 – By and for the Citizens

Intersection with other priority mission(s) identified in this study
• Establish a resilient and sustainable blue economy in Norway • Significantly reduce Norway's transport-related emissions • Establish Norway as a knowledge leader in global change processes, development and international relations • Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce
Involvement of key stakeholders
• Sectors (e.g. energy, transport, development, technology, ocean, business, building, hospitality, retail) • Norwegian higher education institutions and research organisations • Norwegian national agencies (e.g. Ministry of Trade, Industry and Fisheries, Ministry of Transport, Ministry of Petroleum and Energy, Ministry of Local Government and Modernisation, Waste Norway, Bane Nor, Industrial Development Corporation of Norway) • International organisations (e.g. United Nations Environment Programme, International Water Association, United Nations Development Programme, European Commission) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations, Miljøagentene, Norges Naturvernforbund, Norsk Friluftsliv, Natur og Ungdom) • The Research Council of Norway and Innovation Norway

3.1.6. Priority mission area 6: Establish a resilient and sustainable blue economy in Norway

Key challenges that the mission aims to address	
• Helping reduce the negative anthropogenic impacts on the ocean ecosystem; • Improving the sustainable management of ocean ecosystems (including coastal areas); • Developing and sustaining competitive ocean-based industries in Norway (e.g. seafood); • Developing Norway's participation in the United Nations Decade of Ocean Science for Sustainable Development; • Developing impactful technologies and innovations (e.g. for green shipping); • Developing and scaling up sustainable solutions for the blue economy; and • Improving Norway's position as a global leader in relation to the ocean ecosystem.	
Exemplar targeted focus areas[16]	
• Increase the sustainable use of ocean-based resources to achieve economic growth in Norway; • Preserve (and improve) the health of the coastal and marine environment around Norway; • Actively invest in ocean mapping and ocean management programmes; • Strengthen Norway's (international) position and expertise with regard to ocean ecosystems (including ocean governance); • Put Norway at the forefront of R&I activities associated with key sectors of strength (such as aquaculture, fisheries, petroleum and shipping); • Minimise the impacts of ocean acidification; • Examine and invest in opportunities for offshore renewable energy to enable coastal and maritime markets in the long term; • Actively support efforts to promote oceans as a sustainable and safe source of food; and • Ensure the inclusion and active participation of all societal groups.	
Links to RCN Strategic Areas	Links to UN SDGs
• Oceans (primary link) • Green transition • Cohesion and globalisation	• SDG 14: Life Below Water
Links to clusters of Horizon Europe's Global Challenges pillar	Links to EU mission areas identified in Horizon Europe
• Climate, Energy and Mobility • Food, Bioeconomy, Natural Resources, Agriculture and Environment	• Mission Starfish 2030: Restore our Ocean and Waters by 2030
Intersection with other priority mission(s) identified in this study	
• Position Norway as a global knowledge leader in combating marine pollution and establish Norwegian ocean ecosystems free of marine pollution • Enhance Norway's world-leading capabilities and expertise in future maritime technologies • Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce • Actively enable digital transformation at all levels of government in Norway	
Involvement of key stakeholders	
• Sectors (e.g. energy, aquaculture, development, shipping, petroleum, seafood, technology, chemical industry, biotech) • Norwegian higher education institutions and research organisations • Norwegian national agencies (e.g. Ministry of Trade, Industry and Fisheries, Ministry of Transport, Ministry of Petroleum and Energy, Norwegian Petroleum Directorate, Ministry of Local Government and Modernisation, Ministry of Foreign Affairs, Industrial Development Corporation of Norway) • International organisations (e.g. United Nations Environment Programme, International Water Association, Food and Agricultural Organisation of the United Nations, European Commission) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations, Miljøagentene, Norges Naturvernforbund, Norsk Friluftsliv, Natur og Ungdom, Strømmestifelsen) • Research Council of Norway and Innovation Norway	

[16] For example, improve bottom-up and top-down R&D processes with a variety of different stakeholders to ensure the sustainable use of ocean resources (e.g. leveraging the Ocean21 process).

3.1.7. Priority mission area 7: Position Norway as a global leader in combating marine pollution and establish Norwegian ocean ecosystems free of marine pollution

Key challenges that the mission aims to address
• Clearing ocean environments (including coastal areas) of waste; • Ensuring improved and sustainable management of (plastic) waste; • Conserving marine resources and environments and improving their protection; • Supporting communities that are dependent on the marine ecosystem; and • Improving Norway's position as a global leader in relation to the ocean ecosystem.
Exemplar targeted focus areas
• Leverage Norway's world-leading ocean management capabilities and expertise to substantially reduce the amount of marine pollution and hazardous substances (including plastics) entering the ocean environment around Norway (including those arising from land-based activities); • Remove/clean up marine pollutants (including plastics) that are already present in the ocean; • Spearhead international efforts in reducing global marine pollution; and • Reduce greenhouse gas emissions from marine activities, such as domestic shipping and fisheries.

Links to RCN Strategic Areas	Links to UN SDGs
• Oceans (primary link) • Green transition • Cohesion and globalisation	• SDG 13: Climate Action • SDG 14: Life Below Water
Links to clusters of Horizon Europe's Global Challenges pillar	**Links to EU mission areas identified in Horizon Europe**
• Climate, Energy and Mobility • Food, Bioeconomy, Natural Resources, Agriculture and Environment	• Mission Starfish 2030: Restore our Ocean and Waters by 2030

Intersection with other priority mission(s) identified in this study
• Establish a resilient and sustainable blue economy in Norway • Enhance Norway's world-leading capabilities and expertise in future maritime technologies • Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce • Actively enable digital transformation at all levels of government in Norway
Involvement of key stakeholders
• Sectors (e.g. technology, waste, shipping, energy, chemical industry, biotech) • Norwegian higher education institutions and research organisations • Norwegian national agencies (e.g. Ministry of Trade, Industry and Fisheries, Ministry of Transport, Ministry of Petroleum and Energy, Norwegian Petroleum Directorate, Ministry of Local Government and Modernisation, Ministry of Foreign Affairs, Industrial Development Corporation of Norway) • International organisations (e.g. United Nations Environmental Assembly, International Water Association, Food and Agricultural Organization of the United Nations, World Bank, United Nations Development Programme, European Commission) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations, Miljøagentene, Norges Naturvernforbund, Norsk Friluftsliv, Natur og Ungdom) • Research Council of Norway and Innovation Norway

3.1.8. Priority mission area 8: Enhance Norway's world-leading capabilities and expertise in future maritime technologies

Key challenges that the mission aims to address	
• Ensuring effective surveillance and monitoring of the oceans; • Reducing some of the challenges associated with large-scale fishing that have an impact on climate change; • Ensuring sustainable offshore aquaculture; • Ensuring innovative modes of transport, such as autonomous or electric ferries; • Developing green shipping solutions; • Developing new wave and wind technologies; • Supporting communities that are dependent on the marine ecosystem; and • Improving Norway's position as a global leader in relation to the ocean ecosystem.	
Exemplar targeted focus areas	
• Put Norway at the forefront of successfully developing, deploying and scaling up a range of innovative, clean technology solutions applicable to the marine environment around Norway; • Responsibly use data to inform ocean management–related decision making; • Strengthen Norway's position as an international leader in green shipping; • Position Norway as a global leader in leveraging the opportunities offered by maritime technologies while addressing the risks and challenges associated with deploying these technologies; and • Actively promote cooperation (regional and international) between relevant stakeholders in this area.	
Links to RCN Strategic Areas	Links to UN SDGs
• Oceans (primary link) • Technology and digitalisation • Green transition	• SDG 7: Affordable and Clean energy • SDG 13: Climate Action • SDG 14: Life Below Water
Links to clusters of Horizon Europe's Global Challenges pillar	Links to EU mission areas identified in Horizon Europe
• Digital, Industry and Space • Climate, Energy and Mobility • Food, Bioeconomy, Natural Resources, Agriculture and Environment	• Mission Starfish 2030: Restore our Ocean and Waters by 2030
Intersection with other priority mission(s) identified in this study	
• Establish a resilient and sustainable blue economy in Norway • Position Norway as a global leader in combating marine pollution and establish Norwegian ocean ecosystems free of marine pollution • Significantly reduce Norway's transport-related emissions • Contribute to Norway's digital transformation by creating a diverse, digitally and soft-skilled workforce • Actively enable digital transformation at all levels of government in Norway	
Involvement of key stakeholders	
• Sectors (e.g. energy, aquaculture, development, shipping, petroleum, seafood, technology, chemical industry, biotech) • Norwegian higher education institutions and research organisations • Norwegian national agencies (e.g. Ministry of Trade, Industry and Fisheries, Ministry of Transport, Ministry of Petroleum and Energy, Norwegian Petroleum Directorate, Ministry of Local Government and Modernisation, Ministry of Foreign Affairs) • International organisations (e.g. United Nations Environmental Assembly, International Maritime Organisation, International Water Association, Food and Agricultural Organization of the United Nations, World Bank, United Nations Development Programme, European Commission, Industrial Development Corporation of Norway) • Voluntary organisations (e.g. Frivillighet Norge, European Network of National Civil Society Associations, Miljøagentene, Norges Naturvernforbund, Norsk Friluftsliv, Natur og Ungdom) • Research Council of Norway and Innovation Norway	

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Annex A. Future scenario narratives used in the study

In this annex, we present the comprehensive versions of the future scenario narratives across both scenario sets (i.e. Norway in a national context and Norway in a global context). The scenarios were used in the foresight workshops as a tool to examine and debate a set of potential priority missions and discuss ideas for wider structural measures. The narratives were shared with the workshop participants in advance of the workshops. Because of their cross-cutting nature, the cohesion and globalisation, as well as the technology and digitalisation strategic areas (and to some extent green transition as well), were covered by both scenario sets. To aid the reader, before presenting the detailed scenario narratives, we again outline the two broad scenario sets:

- **Scenario set 1 (*Norway in a national context*):** The first scenario set, consisting of four future scenarios, broadly focuses on Norway in a national context, largely relating to the Norwegian domestic agenda. This scenario set encompasses such themes as health, welfare, education, work and skills, cohesion, and relevant aspects of technology and digitalisation, and it also covers some aspects related to green transition (for example, in relation to the circular economy).
- **Scenario set 2 (*Norway in a global context*):** The second scenario set, consisting of four future scenarios, focuses on Norway in an international or global context, primarily relating to Norway's outward-facing role. It broadly covers themes related to climate, oceans, energy, transport, food, biodiversity and globalisation, as well as relevant aspects of technology and digitalisation.

Alongside each scenario narrative, we also outline the associated key characteristics and underpinning factors of the scenarios.[17]

[17] The arrows in the scenario narratives signify as follows: An upwards-facing arrow indicates an increase in the projection/future direction of travel for the factor, a downwards-facing arrow indicates a decrease in the projection/future direction of travel for the factor, and an arrow that goes in both directions horizontally indicates that the projection/future direction of travel for the factor remains the same as the current situation.

Future scenario narratives for the scenario set pertaining to 'Norway in a national context'

Scenario 1: Protectionist decline

Global developments

Shifts in geopolitical power in the 2020s led to a period of political instability over the next decade with serious implications for global trade. Struggling to maintain supply chains, countries increasingly put pressure on locally based companies to serve their needs first. Many countries have adopted a protectionist approach, increasingly looking inwards to protect their own populations. As a result, Norway has become increasingly dependent on primary exports. Even within the EU, which initially sought to maintain a united front, there are divergent views on how to tackle current problems of climate change and stagnant economic growth.

Health and welfare in Norway

The delivery of health and welfare in Norway has also been affected by protectionism. Unable to make proper use of collaboration and imports of medical equipment from other countries, the Norwegian government has struggled to use technology and innovation to meet the complex health needs of the Norwegian population. However, there has been increased national spending on the healthcare sector in terms of research and training, as well as frontline delivery, although medical and care services have not been linked up. Approaches to complex health needs related to an overall increase in life expectancy, population ageing and immigration are largely reactive, with limited capability in preventative strategies. Protectionism presents a significant impediment to pharma and life sciences, hindering the development of industries that thrive on collaboration and sharing.

Societal and economic development

With the slowdown in sovereign wealth fund growth and unpredictability in global markets, Norwegian business and consumer confidence is low. At the same time, the ageing population in Norway has increased spending on social services and pensions. Norway has continued to accept some migrants from countries affected by instability or the effects of climate change, from a pragmatic perspective – to not make the current international situation worse – and to meet some of its labour shortages. However, reduced cooperation with the EU means that skilled labour is generally in short supply. Despite increased growth in some sectors, such as domestic food production, overall productivity growth and labour force participation are low and trust in public institutions is declining. Stagnant economic growth has also reduced much-needed investment in a digital infrastructure that facilitates data sharing, adequately deals with cyber and privacy protection threats, and helps increase the digital skills of the Norwegian population. There is a lack of transnational cooperation of social media, and social media continues to be used extensively to influence public debate on immigrants, spread hate speech and polarise Norwegian society.

The location of jobs and housing and greening initiatives

With limited employment opportunities in urban areas, where the effect of increasing temperatures is also more apparent, Norwegians are dispersing across smaller cities and towns. However, this dispersal is limited by a lack of investment in public transport and digital connectivity. The decrease in urbanisation has positive impacts on health outcomes of populations, with less traffic and pollution. Recent investments have also improved access to health and welfare services across different geographical locations in Norway, although research and training still tends to be city based. There have been some successes in greening domestic energy and linking up waste and energy across the public sector, but the circular economy is not seen as the way forward by politicians or citizens.

Research and innovation

Overall, funding in the R&I sector has reduced, and it is fragmented due to general mistrust of the government and international actors. Norwegian actors are finding it difficult to compete in the world market. These issues are further amplified by the absence of coordination and collaboration across stakeholders in the R&I system in a national and international arena, as well as limited data sharing. Furthermore, the lack of relevant competencies in the labour market required for meeting current and future demands of the sector has created longer-term challenges. In Norway, the absence of infrastructure and funding to support partnerships, combined with restrictions on data access and sharing, has prevented Norway from leveraging and capitalising on the data economy and on the digitalisation trends in the health, pharma and life sciences.

Health and welfare	Demand and access to health and welfare services ↔ Collaboration and interdisciplinarity ↓ Development and adoption of telemedicine and telecare ↔
Economy and society	Discrimination and hate speech ↑ Use of social media to spread disinformation – increasingly used with impact on the spread of misinformation Trust in public administration ↓ Net immigration ↔ Natural resource wealth – slow growth or stagnation in the economy
Location of jobs and housing and greening initiatives	Skilled labour availability to match employment demand ↓ Location of jobs and housing – more dispersion with mixed transport links Ability of Norway to adapt to climate change ↔ Circular infrastructure for energy, water and waste supply – focussed on current approaches.
Technology, digital skils and digital threats	Digital skills – digital divide increases ↓ Digital security and cyber protection – Norway is unable to respond, and threats increase, demanding increasing protection Data sharing Technology convergence and use of enabling technologies ↓
Research and innovation	Globalisation of research and innovation and data sharing – decrease in international data sharing and collaboration Funding for research and innovation – decreases

Scenario 2: Going green together

Global developments

During the 2020s there was a realisation across governments, industry leaders and populations that the relationship with the planet is key and resources and time are finite. This led to efforts at the international level and activism at the local level to build a green agenda. Norway, already a leader in renewable energy and decarbonised transport, has focused on further reducing its environmental and climate impact.

Health and welfare in Norway

Norway has undergone significant demographic changes, with a shift towards a higher number of senior citizens. This has created pressure for the healthcare system due to increased demand for services. On the other hand, there is increased access to health and welfare services as a result of policies promoting decentralisation towards municipalities and increasing digitalisation of the healthcare sector. Telehealth has become the default option, allowing for a more targeted and less resource-intensive provision of services, reducing unnecessary travel. Access to healthcare has also improved through strategies focused on reducing and preventing social inequalities in health, such as prevalence of risk factors in population sectors with lower income and education. Alongside these changes, there has been an increase in digital skills across the Norwegian population due to efforts from the government to build digital competence by adapting the education curricula and providing adequate training across all age groups and sectors. These educational programmes have also sought to develop other relevant employment skills as the economy continues to move from a consumption to a green approach.

Societal and economic development

Norway has seen a decline in hate speech and discrimination, partly as a result of interventions, such as the increased capacity of authority to tackle these issues, especially in the online environment. Internet and smartphone use remain high in Norway. With the higher level of digital competence across all demographics and improved data security and ethics standards, social media is generally seen as a reliable source, used to facilitate a range of peer-to-peer activities and communications, from grassroots to government. Pockets of misinformation remain, however, and attract a vocal minority. Data security standards have also created tensions given the overregulation perceived by the Norwegian population.

The location of jobs and housing and greening initiatives

The success of Norway's approach is reflected in the level of trust in Norway's public administration, which continues to grow. This has been important in fostering green transition initiatives through the interconnection between citizens, local governments and local businesses. Cross-sectoral cooperation and cooperation across different governance levels have promoted a circular economy at national, regional and local levels. The Government Pension Fund of Norway has managed to adequately manage climate risks by investing in climate change policy and new technology. This is particularly the case within regions with higher population density, such as cities, where the adaptation of the built environment has been an important priority for the green transition, and green initiatives, such as urban farming and 'green builds' that are fully carbon neutral, have become more widespread. Additionally, citizens have a more prominent role in the green transition through higher levels of engagement in innovation and green entrepreneurship, as well as through local activism. There are, however, challenges in fostering behavioural change; older generations show more reluctance to adapting to new social norms, while younger generations feel they are being asked to pay too much of the price for climate change.

Research and innovation

Open science and increased data sharing have made research more accessible to citizens and policy makers, which has been particularly beneficial in supporting evidence-based policy for the green transition. Increased data availability has also allowed researchers to better evaluate the effectiveness and acceptability of initiatives, and to determine how Norway can best leverage and adapt to these. Aligned with the focus on cybersecurity in the EU Framework Programme, Norway has made a key priority to embed data protection and information security in its information and communications technology policy strategy, which has allowed for a better response to digital and cyber security threats, which have now decreased. Additionally, the green transition has led to a redistribution of jobs, away from jobs in a fossil-fuelled industry towards jobs in a green economy.

Health and welfare	Demand and access to health and welfare services	↑
	Collaboration and interdisciplinarity	↑
	Development and adoption of telemedicine and telecare	↑
Economy and society	Discrimination and hate speech	↓
	Use of social media to spread disinformation – increasingly used, but little impact on the spread of disinformation	
	Trust in public administration	↑
	Net immigration	↓
	Natural resource wealth – steady growth in the economy, greater share of wealth from sustainable sources	
Location of jobs and housing and greening initiatives	Skilled labour availability to match employment demand	↑
	Location of jobs and housing – located in big cities and transport-friendly locations	
	Ability of Norway to adapt to climate change	↑
	Circular infrastructure for energy, water and waste supply – develop rapidly and are implemented at national, regional and local levels	
Technology, digital skills and digital threats	Digital skills – decrease, digital divide increases	
	Digital security and cyber protection – Norway is better able to respond, decreasing threats	
	Data sharing	↑
	Technology convergence and use of enabling technologies	↑
Research and innovation	Globalisation of research and innovation and data sharing – increasing international data sharing and collaboration (open and distributed)	
	Funding for research and innovation – sufficient and continuous	

Scenario 3: Slowly changing society

Global developments

The mid- to late 2020s saw a return to business as usual for most of the world and Norway. Strategic alliances have largely remained the same, and there is a slow but steady drift of economic power and influence away from Western powers. Although there have been periods of strong support for environmental activism, particularly in Europe, this has not been sustained, and internationally there has not been a real impetus for change. There has been some progress towards reducing emissions, but without a clear vision at the international level, this progress has not been sufficient, and the impacts of climate warming are starting to be felt.

Health and welfare in Norway

Trends towards technological innovation and digitalisation in the healthcare system in Norway have continued, and there are areas of Norway where there is strong technological innovation. However, these are not widely rolled out across different regions in Norway, and there are challenges with collaboration between the private and public sectors. Some private initiatives exist in the healthcare sector, but the Norwegian system continues to rely heavily on public funds, and measures to improve care coordination have been only partly successful. The healthcare workforce has been only partly able to meet the growing health and long-term care needs that have resulted from Norway's ageing population, increased immigration, and the effects of climate change. There is also a reluctance to address the underlying issues of social inequalities in life expectancy, disparities among income groups, and behavioural risk factors.

Societal and economic development

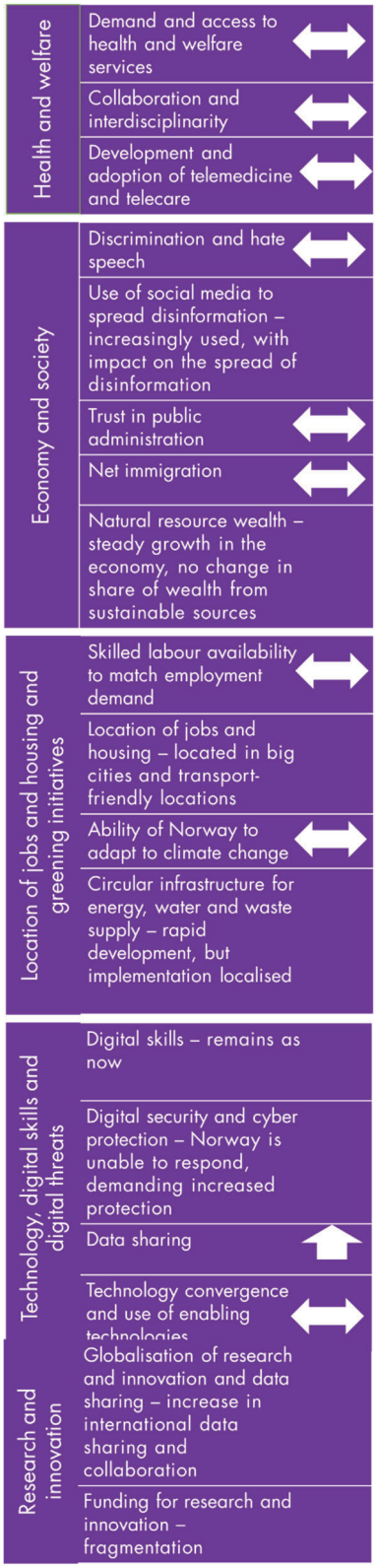
Regional conflicts and climate change have created increased pressure on immigration globally, but Norway has always had strong measures in place to ensure education and employment for migrants. Despite this, tensions still exist, particularly with regard to cultural integration. With only incremental changes in the make-up of the Norwegian welfare provision and labour markets, trust in public institutions remains relatively high, but there is concern about Norway's strategy for ensuring it has the necessary digital and employment skills to deal with changes in the national and global landscape. Although there is good digital provision in Norway, lack of appropriate regulation of the digital space means that social media continues to be a source of misinformation, feeding potential social divisions.

The location of jobs and housing and greening initiatives

There has been an increasing concentration of the Norwegian population in urban areas, as a thicker labour market in the cities has been better able to meet the demand of workers with specific qualifications. At the same time, commercial activity has opened up in the Arctic following the lack of impetus to deal with climate change internationally, which has accelerated the melting of the sea ice in the Arctic. This has accelerated economic growth in counties in northern Norway, but challenges persist with ensuring that there is access to labour with the necessary skills and expertise to make use of an improved knowledge base and value creation in the North. Regional development initiatives also remain weakly connected and do not really support the Sami community and their employment and business opportunities. Because Norwegians are concentrated in cities, it has been easy to join together energy and waste initiatives across hospitals and public sector buildings. This has also facilitated the creation of city-led initiatives, but their wider take-up has not been incentivised. Many Norwegians feel that they are already playing their part with renewable energy and electric vehicle use. Although people have greater access to services in urban areas, the concentration of people in cities also means that there are increased pressures of mass marketing, availability of unhealthy food choices and access to transport, which all have an effect on lifestyles and negative health outcomes.

Research and innovation

National and international collaboration for R&I continues to increase, but researchers continue to voice concerns about data sharing, and funding for interdisciplinary research is limited. The lack of collaboration between industry and the higher education sectors also poses key challenges for Norway. The skills that Norwegians obtain through higher education are not fully aligned with the skills needed in the labour market, particularly as new areas of innovation open up and automation, the application of artificial intelligence and broader technology convergence start to change the nature of employment. There is a fragmented funding landscape that is largely focused on excellent science, while the translation into innovation outputs is limited. In health, Norway concentrates health R&D in university research, and there is weak coordination between the different key actors in the R&D health system, which has had resulted in a lack of cost-effectiveness in the development of pharmaceuticals in Norway.



Scenario 4: Technological trajectory

Global developments

In line with the prevailing international view, Norway has focused on technological advances to promote economic growth and support its sustainability goals. Technology and the knowledge-based economy have been the main tenets of the Norwegian R&I agenda, from both an international and a domestic perspective, with new technologies and their convergence having brought about significant advances in health and welfare. However, changes in employment have created new social inequalities.

Health and welfare in Norway

Many digital solutions have been integrated into health and welfare services, which has helped to address the continued demand and pressure for these services. Automation and artificial intelligence are commonplace in healthcare, and telehealth has become the default option for health and welfare. Digital technology, such as robotics, is used to help support the autonomy of older people. Thanks to its comprehensive health databases and its ability to exploit large amounts of patient data, Norway was able to rapidly digitalise the health sector. In addition, health data; an improved focus on funding; and developments in and convergence of bioinformatics, genetic engineering, biotechnology and nanotechnology have enabled Norway to move towards personalised medicine, which has made great strides since the 2020s. Overall, this has led to a more patient-centred health system. However, there are concerns that the health system is becoming 'twin-track', because users have to be digitally competent and willing to share personal data to access it and because some advanced treatments are only available privately.

Societal and economic developments

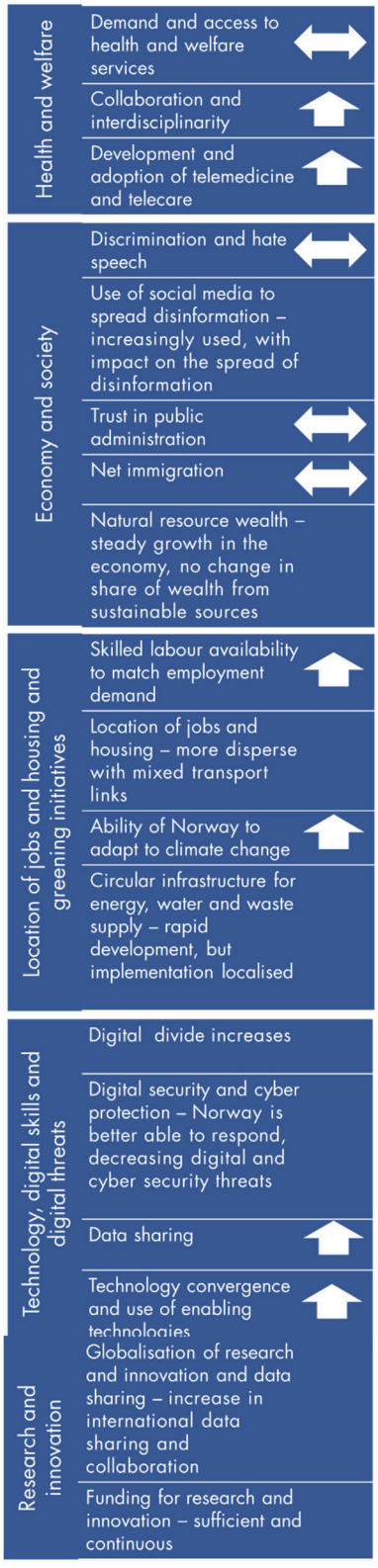
Although a substantial part of the Norwegian population now has access to Internet and service industries, such as banking, finance and tourism, have achieved efficiency gains and improved their business processes, some people are being left behind in terms of their digital skills even though the economy is doing well. Technology convergence and development has been led by Norwegian industry, and central and local government and other public sectors have not fully integrated common systems for user-friendly digital services. There is acceptance from the public that data generally has to be shared to access services and participate in society, and the Norwegian population continues to have a relatively stable level of trust in its public institutions. However, trust in government has, at the same time, not increased, and the perceived lack of control around data privacy and security issues threatens to reduce it further. The application of advanced technologies has contributed to efficiencies in transport, health, agriculture and food, and manufacturing industries, at the same time transforming employment in these industries. Norway has actively addressed these changing employment needs through education and training policies. Although overall immigration to Norway has remained stable, there has been a shift in the type of immigrant, to higher-skilled, wealthier immigrants. However, the need for some low-skilled labour remains, and political tensions around the role of immigrants in the Norwegian economy and society persist.

The location of jobs and housing and greening initiatives

Remote working has been the norm since the 2020s. Investment in digital infrastructure has continued, and many Norwegians have moved out of urban centres to smaller cities and towns, where the impacts of climate change are currently more supportable. The Internet and social media are key elements of this lifestyle, with vast amounts of data changing hands and control of platforms still in the hands of Big Tech companies that actively resist regulation. Norway is not alone in struggling to police misinformation, and it has invested heavily with partners in cyber security prevention.

Research and innovation

The increased use of artificial intelligence, big data and genomics in Norwegian society has been associated with a steadily rising demand for data and data sharing both nationally and internationally. Norway has been able to widely deploy technologies across sectors due to increasing collaboration and funding for collaboration across sectors. However, R&I initiatives for developments in technology tend to be geared towards developments in the natural sciences. There is a lack of recognition of the human, ethical and legal challenges that emerge with increased data sharing and resulting privacy and cyber security threats, which contributes to a growing distrust of pervasive technology in Norway.



Future scenario narratives for the scenario set pertaining to 'Norway in a global context'

Scenario 1: Protectionist decline

Global landscape

Shifts in geopolitical power that came to the fore in the 2020s led to a period of political instability over the next decade, with serious implications for global trade. Struggling to maintain supply chains, countries increasingly put pressure on locally based companies to serve their needs first. By 2040, this has led to mistrust even among former close allies. Many countries have adopted a protectionist approach, increasingly looking inwards to protect their own populations. Even within the EU, which initially sought to maintain a united front, member states have divergent views on how to tackle current problems of climate change and stagnant economic growth. At the international level, cooperation on climate goals has plummeted and targets agreed at the last United Nations Climate Change Conference, five years ago, look increasingly unattainable. The negative impacts of climate change have been limited only by the poorly performing global economy.

Trade and availability of skilled labour

The uncertainty in global trade has seen countries re-shore food production and manufacturing. In Norway, as elsewhere, there has been investment in automation and additive manufacturing to support this move. Although there has been an increase in immigration from countries affected by instability or climate effects, reduced cooperation with the EU means that skilled labour is in short supply. Norway remains a trusted partner for energy, but export demand for the industry has fallen, and some countries have chosen to invest in home-grown renewable energy to secure their supply. Demand for Norwegian seafood products and shipping in global markets is also down, and Norway's imports of manufactured items have also declined.

Circular initiatives

Despite Norway's success in greening its domestic energy and transport sectors, successive governments have found it increasingly difficult to encourage further behavioural change through circular economy initiatives when consumption is down and many in the population are worrying about how to pay their bills. Stagnant economic growth has meant that much-needed investment in digital infrastructure has also stalled. Compounding this, the levels of public trust in science and technology are at an all-time low, and a few high-profile cyber-attacks have dominated the headlines.

Research and innovation

Research and innovation in Norway has been affected by reduced funding and the loss of some external collaborators, as mistrust also pervades this sector; long-term investment in research loses out to short-term policy needs as both governments and industry tighten their belts. Most funding now comes from national bodies and aims at least to facilitate collaboration between public and private sectors domestically. Opportunities are seen to develop the ocean and onshore environments for food and energy production. There is also an ambition to develop new applications using skills and innovations from the petroleum sector that could boost the economy.

Green transition

- Demand and support for circular initiatives
- Circular infrastructure for energy, water and waste supply – remains focussed on current approaches
- Investments/innovations to reduce emissions from oil
- Ability of Norway to adapt to climate change
- Food security and supply – Norway maintains security of food supply with higher share of domestic production
- Low-carbon business models (international) – no change in emergence

Oceans

- Sustainable aquaculture – little expansion in the aquaculture sector
- Norwegian shipping industry – greening of international shipping industry remains as now

Globalisation and society

- Norway's trade linkages with other countries
- Norwegian cooperation with EU/EEA
- Natural resource wealth – slow growth or stagnation
- Make up of geopolitical landscape – the geopolitical landscape becomes less stable with a shift in global power
- Skilled labour availability (to match employment demand)
- Teechnology convergence and the use of enabling technologies

Research and innovation

- Globalisation of research and innovation and data sharing – decrease in international data sharing and collaboration
- Funding for research and innovation – decreases

Scenario 2: Global greening

Global developments

During the 2020s, there was a further realisation across governments, industry leaders and populations that their relationship with the planet is key and resources and time are finite. This led to efforts at the international level and activism at the local level to build a green agenda. The EU sees the benefits not only of greater internal cooperation, but also of building external relations and leading by example. Relations between major powers have improved as these countries see value in pursuing a 'green economy' approach, focusing on innovative solutions for all sectors, rather than securing ownership of rapidly depleting resources. Regions like Africa and South America are now recognised for their valuable resources, but regional disparities still remain. The impacts of climate change are happening at a slower rate, but the longer-term focus is on adaptation, as the current trajectory, tracking close to a 2°C increase, looks hard to maintain.

Circular economy

The top-down approach means that low-carbon business models have developed across many sectors where there are international trade sectors, and this is matched by a demand within Norway, in Europe, and internationally for products and services that have a low impact on the environment and climate. A circular economy approach has been central to this. Some change has been industry led, some has been driven by international agreements and legislation; Norway has worked hard within supra-national institutions to further this agenda and support regional change through overseas aid. But changing consumer attitudes has also been key, and top-down approaches are balanced against initiatives driven by communities and government at the local level, where quality of life is displacing consumption as a measure of success and there is a focus on local production and consumption. Yet tensions persist among different stakeholder groups, with some advocating a more relaxed approach to the environment given the gains made in recent years.

Renewable energy

There has been a rapid move away from fossil fuel dependence to electricity from renewables, linked to expanding regional grids. The Government Pension Fund of Norway has managed to adequately manage climate risks by investing in climate change policy and new technology. International travel and transport of goods have not returned to levels seen in the 2010s. Norway has invested heavily in offshore renewables and is a key proponent of greener and smarter shipping – one area where hydrogen has taken off.

Circular initiatives and technology in Norway

In Norway, circular initiatives have been introduced in relation to key sectors of energy, waste and water by the government, but there is also a supportive environment for local solutions, resulting in a boom in green entrepreneurship that enjoys easy access to European markets. Technology and data are seen as key to sustainable solutions, from food to retail, with many of these starting at a small scale, seizing supply chain opportunities offered by a move to low-carbon business models by bigger companies at the national and international level and the public sector. However, technology is seen as the means and not the end. Norway has also seen its aquaculture exports expand, although for fresh products these have focused on EU markets, and the domestic share of food production has also increased.

Research and innovation

There has been investment in research, which is seen as key to a green future, both within the EU and in Norway. This has been accompanied by greater collaboration between these partners and internationally. To facilitate openness in research and innovation, the EU has also worked together with industry and national governments to develop protocols for data sharing, improved data security and authentication. While there has been action to re-align education and training to better match skills to the changing employment opportunities in Norway, these systems are still seen as being slow to respond. Collaborative research in social sciences has also been important to maintain momentum towards climate goals and global stability, keeping citizens educated and engaged.

Green transition

- Demand and support for circular initiatives ↑
- Circular infrastructure for energy, water and waste supply – develop rapidly and implement at national, regional and national levels
- Investments/innovations to reduce emissions from oil ↑
- Ability of Norway to adapt to climate change ↑
- Food security and supply – Norway maintains security of food supply with higher share of domestic production
- Low-carbon business models (international) – rapid emergence

Oceans

- Sustainable aquaculture – expanded aquaculture sector with expanded share of sustainable farming
- Norwegian shipping industry – greening of international shipping industry is extensive

Globalisation and society

- Norway's trade linkages with other countries ↑
- Norwegian cooperation with EU/EEA ↑
- Natural resource wealth – steady growth, with greater share from sustainable sources
- Make-up of geopolitical landscape – more stable, with greater cooperation and stability in Norway's partner countries
- Skilled labour availability (to match employment demand) ↑
- Technology convergence and the use of enabling technologies ↑

Research and innovation

- Globalisation of research and innovation and data sharing – increase in international data sharing and collaboration (open and distributed)
- Funding for research and innovation – sufficient and continuous

Scenario 3: Slowly shifting power

Global developments

The mid- to late 2020s saw a return to business much as usual for most of the world. Although Britain's exit from the European Union did result in a small shift in trading patterns, strategic alliances have largely remained unchanged, and the slow but steady drift of economic power and influence away from Western powers has continued. Regional conflicts rumble on, but wider geopolitical tensions, for a while the focus of global attention, have now largely eased. The intervening years have seen the usual rounds of climate and trade summits, but existing supra-national structures are losing their relevance. Although there have been periods of strong support for environmental activism, particularly in Europe, this had not been sustained, and internationally, it has not led to impetus for real change. There has been some steady progress towards reducing carbon emissions, but, as foreseen, without a clear vision at the international level, this has not been sufficient, and the impacts of climate warming are starting to be felt.

Economic trends

Economic trends towards increasing supply chain efficiencies through automation, artificial intelligence, and distributed ledger technologies have continued, as have efforts to decarbonise the transport and energy sectors. Electric cars are now increasingly widespread, but there is a lack of consensus on greening international shipping and aviation. Progress in other sectors, which depend on commercial incentives for citizens and businesses, is more limited. The circular economy is still seen as a key solution by the EU, but it has not gained much traction across member states, especially when other problems seem more pressing.

Oceans

The ocean has become an important focus for the Norwegian economy. There is continued demand for sustainable gas from Norway's key partners as they transition towards net-zero, and Norway has expanded its ocean-bed carbon storage capability to decarbonise its gas exports. Other offshore technologies, such as solar panels and wave energy convertors, are being explored to supplement its hydropower and offshore wind farms. As a knowledge leader in the oceans sector, Norway has exported these solutions, often as part of its efforts to support developing countries. At the same time, Norway has seen increased demand for seafood, leading to an expansion in that sector. However, by 2040, the ability of the ocean to sustain all this activity is not clear. The impacts of climate change are particularly felt in the High North, and these changes have accelerated changes in Arctic ecosystems and the loss of sustainable habitats for Arctic species. Norway is increasingly looking to Europe and the Nordics for collaboration to solve some of these challenges. The rapid melting of the sea ice in the Arctic in recent years has reduced some of the natural ice borders between countries, creating a renewed focus on opportunities for commercial activity in the region but also tensions with other nations.

The circular economy in Norway

Norway has opted for a government-led approach to the circular economy, mainly focusing on its energy and waste sectors as areas where these approaches could be the most beneficial. Local initiatives aimed at reducing consumption through reuse, repairing and recycling are encouraged but currently not incentivised, and many Norwegians feel that by leading on renewable energy and electric vehicle use, they are already playing their part. Green shipping is one area where Norway is leading the way again, having introduced electric batteries and carbon capture technologies into its domestic fleet.

Research and innovation

Funding for research and development has remained fragmented both within Norway and externally. Norway has continued to co-operate closely with its EU/EEA partners. Substantial funding has been available in some areas, but the closed nature of collaboration between institutions and the lack of focus on monitoring and data sharing have meant that resources have not been targeted appropriately; there has been a lack of investment in interdisciplinary collaboration; and challenges remain with the translation of excellent science into innovations. Norwegian efforts in technology convergence have remained broad, covering energy, electronics and optics, the environment, and health. But because much research is still undertaken by the private sector and because the humanities, social science and legal perspectives on technology have not been systematically addressed, this has so far not led to the expected transformational change.

Scenario 4: Technological trajectory

Global developments

After some turbulence at the start of the 2020s, the focus has been on revitalising the global economy, which is seen as a key driver for reducing global inequalities and achieving inter-regional stability. As economic and geopolitical power has continued to shift towards the BRIC (Brazil, Russia, India and China) countries, Western democracies have looked to establish new regional relationships that have opened up opportunities for Norway for trade, investment and R&I collaboration. Norway has continued to play an active role in international institutions, but the prevailing international view has been that climate change goals can be achieved through digitalisation and technological advances. Consumption is still regarded as an important driver of economic growth, and the green agenda has somewhat taken a back seat. This is reflected in the current pace of environmental change, with the result that by 2040, there is a growing clamour for more action.

The use of technology

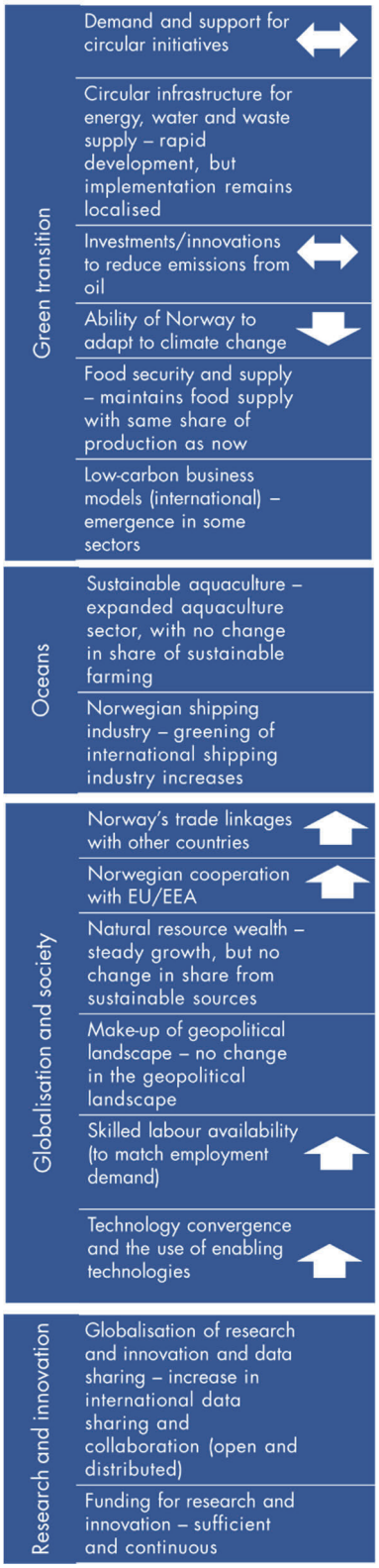
Technology has played a key in role in recent economic growth, impacting on many areas of daily life as using the Internet for entertainment, socialising shopping, working, accessing services and education has become the norm. Automation and AI are commonplace across a range of sectors, and technology convergence has led to a re-alignment in the transport, health, agriculture, food and manufacturing industries, resulting in new players and new business models. Although the perception is that power remains in the hands of a few, rapid regional expansions have created new firms. Technology has contributed to reducing carbon emissions, from large-scale carbon capture and storage and green hydrogen generation, to small-scale urban farming. Innovative technological solutions have also been implemented to both reduce and remove marine biowaste and plastics. But technology is now seen by some as a problem too in terms of resource and energy use. The past decade has also seen considerable movement of goods and people across the planet, as well as continued urbanisation. And, while changes in employment brought about by technological advances have been accommodated in some countries through forward-looking skills and education strategies, this is by no means the norm, potentially introducing new inequalities.

The Norwegian economy

The Norwegian economy has also shown strong growth, fuelled by a continued close relationship with Europe but also by new trade links, providing technology partners and new markets for seafood products and energy solutions. Norway has invested in integrating energy and waste systems at a national level, collaborating closely with European neighbours on these and exporting this expertise. It has also continued to expand its carbon capture and storage capability, but hydrogen from sea-splitting, first trialled as part of shipping, is a potential new export. There has also been rapid growth in green initiatives in other areas that are often technology led. There is demand for sustainable solutions at the European level, but without real cross-sectoral synergies, it remains difficult for new green companies to expand outside Norway.

Research and innovation

Technology and the knowledge-based economy have been the main tenets of the Norwegian R&I agenda both from an international and from a domestic perspective, with technology seen to underpin many sustainability objectives. To promote openness and transparency in international data sharing and collaboration, public funding from national bodies and the EU has been supplemented by the development of new relationships with universities and research institutes, including in South-east Asia and South America. This has resulted in a rapid expansion in the research base, without having to be overly dependent on a small number of foreign economies and the private sector. A key part of the agenda has also been developing a base of highly skilled workers, both through an open-door policy for overseas researchers and an agile, responsive higher education sector. But less focus has been placed on training for those who have seen their jobs displaced.



Annex B. Set of indicative priority missions related to the RCN's five strategic areas

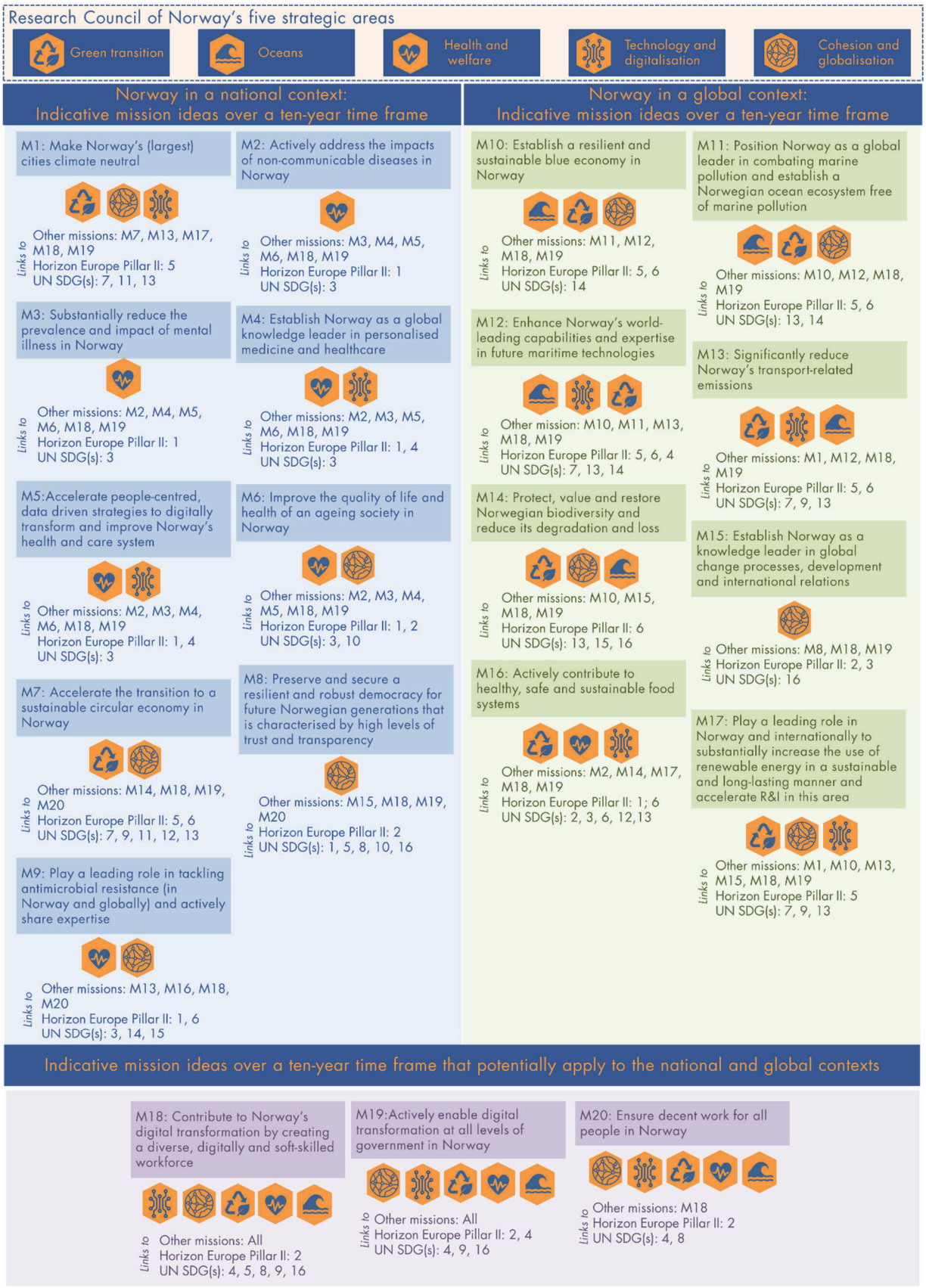
In the infographic below, we provide an overview of indicative mission ideas that have been articulated within, across and outside the RCN's five strategic areas (oceans; green transition; health and welfare; technology and digitalisation; and cohesion and globalisation).[18] The priority missions have been structured according to the two high-level scenario sets discussed in Chapter 2 and Annex A. As highlighted previously, all the missions are cross-cutting in terms of potential sectors and disciplines involved and will need a multi-stakeholder approach to be implemented. The spectrum of target focus areas for each mission will need to be specified with distinct, measurable and timebound goals that are decided by the stakeholders involved in selecting and implementing the missions. Furthermore, their implementation will also require social sciences, humanities, legal and ethical perspectives to be effectively incorporated. Finally, the missions must engage the public regularly and in a meaningful manner, and also be evaluated against a set of clearly defined criteria that are set out upfront.

[18] In the infographic, we highlight the broad links between the priority missions and the United Nations Sustainable Development Goals (UN SDGs) and the clusters under Pillar II of Horizon Europe.

The UN SDGs are: SDG1: No poverty; SDG2: Zero hunger; SDG3: Good health and well-being; SDG4: Quality education; SDG5: Gender equality; SDG6: Clean water and sanitation; SDG7: Affordable and clean energy; SDG8: Decent work and economic growth; SDG9: Industry, innovation and infrastructure; SDG10: Reduced inequalities; SDG11: Sustainable cities and communities; SDG12: Responsible consumption and production; SDG13: Climate action; SDG14: Life below water; SDG15: Life on land; SDG16: Peace, justice and strong institutions; and SDG17: Partnerships for the goals.

The Horizon Europe Clusters under Pillar II includes: (1): Health; (2): Culture, Creativity and Inclusive Society; (3): Civil Security for Society; (4): Digital, Industry and Space; (5): Climate, Energy and Mobility; and (6): Food, Bioeconomy, Natural Resources, Agriculture and Environment.

Figure B.1 Indicative priority missions proposed within and across the five strategic areas



Source: Study team analysis