ETC-CA Report 2024/2

Characteristics and conditions of adaptation policy in European Environment Agency member and cooperating countries

Authors:

Markus Leitner (Environment Agency Austria (EAA)), Katie Johnson (Euro-Mediterranean Center on Climate Change (CMCC)), Wolfgang Lexer (EAA), Johan Munck af Rosenschöld (Finnish Environment Institute (Syke)), Thomas Dworak (Fresh Thoughts (FT)), Angelika Tamásová, Aneliya Nikolova and Wouter Vanneuville (European Environment Agency (EEA))

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Summary

This European Topic Centre on Climate change Adaptation and LULUCF (ETC CA) report aims to provide a deeper understanding of the diverse landscape of adaptation policy frameworks and instruments utilized across the 38 European Environment Agency member and cooperating countries, exploring their defining characteristics and how they operate within national contexts. Particular attention is given to countries with national climate laws governing climate change adaptation. The report provides an assessment of adaptation policy documents and reports published through July 2024.

The report takes stock of the progress made in establishing legal frameworks and policies for climate adaptation across Europe. However, it also identifies challenges in integrating monitoring and evaluation systems, ensuring that adaptation actions lead to meaningful risk reduction and increased resilience. The findings suggest a need for continued efforts to enhance the coherence and effectiveness of adaptation policies through robust legal mandates and improved governance structures.

Climate Risk Assessments

- Climate risk assessments are essential for informing adaptation policies, with 21 countries having completed comprehensive assessments.
- Legal mandates for comprehensive Climate risk assessments are increasingly common, with 14 countries requiring them.
- Integration of Climate risk assessment into the adaptation policy cycle is evident, but connections with monitoring, evaluation, and learning systems remain limited.

Adaptation policy landscape

- Most countries have established National Adaptation Strategies, which serve as high-level frameworks for coordinating adaptation efforts.
- National Adaptation Plans are used by two thirds of countries to operationalize National Adaptation Strategies into actionable plans, detailing specific adaptation actions.
- The development and oversight of National Adaptation Strategies and National Adaptation Plans are typically led by environmental ministries, with varying levels of stakeholder engagement. Horizontal coordination is more established compared to vertical coordination.
- Sectoral Adaptation Plans are less common but are gaining traction, particularly in sectors like agriculture and health.
- Countries are increasingly required to develop Sectoral Adaptation Plans through climate legislation, reflecting a shift towards more targeted adaptation plans.

Legal provisions for adaptation

- All European Environment Agency countries have adopted national adaptation policies, demonstrating a commitment to enhancing adaptive capacity.
- Legal provisions for adaptation are present in many countries, with 18 having dedicated national climate laws that include adaptation elements. The only country with a specific and standalone adaptation law is Germany (as of July 2024).
- The adaptation policy landscape is diverse, with varying degrees of integration and coordination across sectors and levels of governance.

Monitoring, Evaluation, and Learning

- While many countries have established some aspects of Monitoring, Evaluation, and Learning processes, challenges remain in linking these systems across different governance levels and making use of it for mutual learning.
- The absence of measurable adaptation goals complicates the effectiveness of Monitoring, Evaluation, and Learning efforts.
- Even though a diverse mix of approaches support tracking outputs of adaptation actions, understanding the outcomes on risk reduction and increased resilience remains limited. The development and use of outcome-based indicators and criteria are not yet prevalent.

1. Introduction

European countries are increasingly engaging in climate adaptation to address the diverse impacts of climate change. These efforts reflect a strong commitment to climate resilience, but they also reveal a diverse and increasingly complex policy landscape across Europe. A recent assessment of the 2023 reporting on national adaptation actions under Article 19 of the Regulation on the Governance of the Energy Union and Climate Action (Leitner et al., 2023) highlighted the heterogeneity between adaptation policy documents (e.g. strategies, plans, programmes) and ways how European Environment Agency member countries use them to support national adaptation initiatives across Europe. Adaptation policy to respond to current and future climate change impacts is increasingly complex because of specific national circumstances, determined by varying degrees of coordination between governance levels as well as mainstreaming at these different policy levels. In addition, a movement towards using more binding instruments adds a new layer of commitment as well as complexity.

The shift toward legally binding adaptation at the national level through the adoption of legislation with adaptation provisions (i.e. climate laws, acts or ordinances), and Germany's Federal Climate Adaptation Act, mark an important development in the European adaptation policy landscape. This development aligns with the provisions of the European Climate Law (Regulation (EU) 2021/1119) (EU, 2021), which mandates that Member States adopt, implement and regularly update national adaptation strategies and plans based on robust impact, vulnerability and risk assessments. Despite these advances, there is still limited understanding of how the diverse landscape of adaptation policy instruments, specifically legally binding instruments covering adaptation, work within and compare across countries. Additionally, the interplay between sector-specific adaptation instruments and overarching national as well as subnational frameworks are not yet fully understood, highlighting a need for further analysis.

At the international level, the United Arab Emirates (UAE) Framework for Global Climate Resilience (UNFCCC, 2023) provides a structured approach for assessing the extent to which adaptation action and support guide the achievement of the global goal on adaptation. The framework includes an iterative adaptation cycle, organised around four dimensions: (a) impact, vulnerability and risk assessment, (b) planning, (c) implementation, and (d) monitoring, evaluation and learning, which provide the structure for this report. At the European level, the 2023 guidelines on Member States adaptation strategies and plans (EC, 2023) outline a similar approach to support them in progressing their adaptation policies.

This report aims to provide a deeper understanding of the current adaptation policy landscape in EEA member and cooperating countries (snapshot as of July 2024) across the four dimensions of the adaptation cycle, with a special focus on countries with legal provisions for adaptation. It explores how binding and non-binding adaptation policies function and interact with sector-specific instruments.

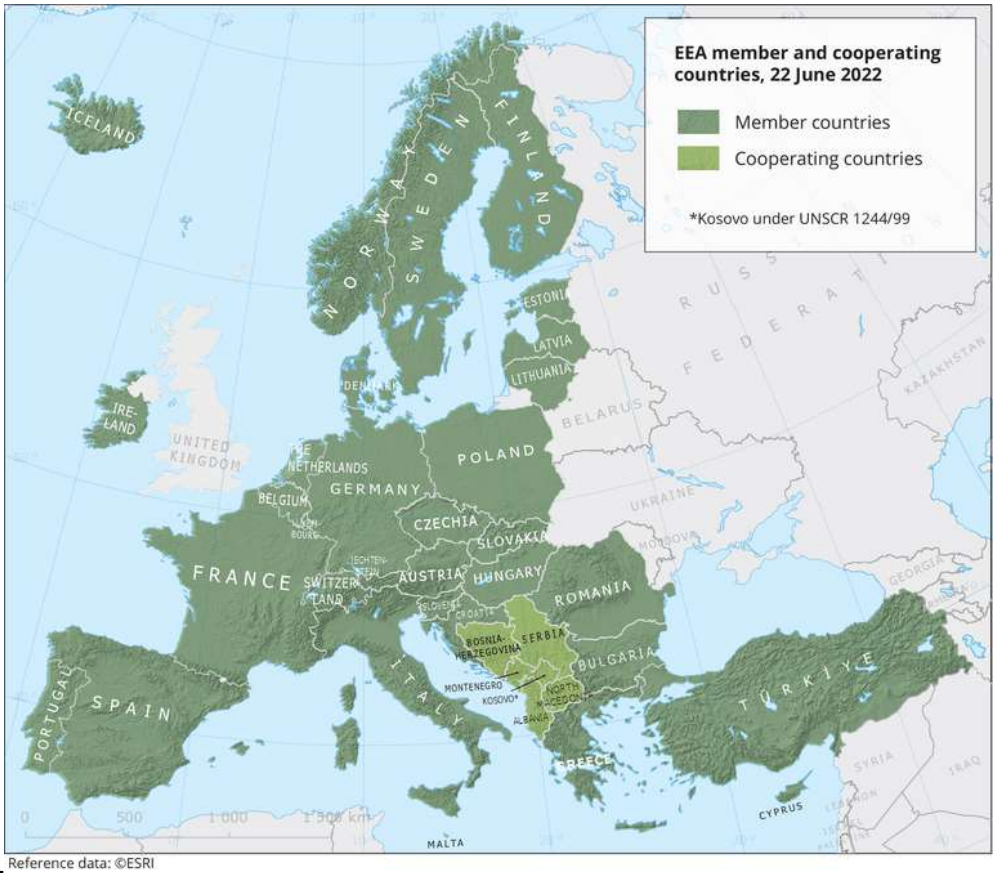
1.1. Scope of the report

The research activity detailed in this report is informed and motivated by previous EEA and European Topic Centre on Climate change adaptation and LULUCF (ETC CA) assessments of national adaptation actions (EEA, 2022; Leitner et al., 2023) reported by EU Member States under Article 19 of the Regulation on the Governance of the Energy Union and Climate Action (EU, 2018). While reporting is mandatory for EU Member States, some EEA member countries that are not EU Member States reported on a voluntary basis in 2021 and 2023, however there is no comprehensive overview of national adaptation policy in the cooperating countries. The geographic scope of this report is broader than previous EEA and ETC CA reports and briefings on national adaptation action, as it extends to include the 32 EEA member countries and 6 EEA cooperating countries[1] (see Map 1).

The report thus focuses specifically on adaptation policy instruments including national climate laws, National Adaptation Strategies (NASs), National Adaptation Plans (NAPs), Sectoral Adaptation Plans (SAPs), and examples of other relevant national legislation that governs various elements of climate change

[1] Kosovo under UNSCR 1244/99

adaptation. It also provides an overview of Climate risk assessments (CRAs) and details how information on current and future climate risks is an integral part of adaptation planning and policy-making[2].



Map 1 Reference data: ©ESRI

Map 1. EEA member and cooperating countries[3]

1.2. Methodology

This report is based on the following methodological steps:

- **Development of a conceptual approach**: Adaptation policy screening guidelines for desk research were developed based on qualitative aspects of the adaptation policy content and process (see Annex 1 Adaptation policy screening guidelines), following the adaptation cycle of the UAE Framework for Global Climate Resilience.
- **Desktop research**: Relevant policy documents were collected then reviewed according to the screening criteria developed. Policy documents reported under Article 19 of the Energy Union Governance Regulation and the findings of the assessments of information reported in 2021 and 2023 (EEA, 2022; Leitner et al., 2023; EEA, 2023) were used as a starting point for this research. Documents include NASs, NAPs, SAPs, climate and adaptation laws, and other national legislative

[2] UNFCCC recommends that "adaptation should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into socioeconomic and environmental policies and actions." https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/introduction#:~:text=Adaptation%20refers%20to%20adjustments%20in,opportunities%20associated%20with%20climate%20change.

[3] . Source: https://www.eea.europa.eu/en/analysis/maps-and-charts/eea-member-countries-5

documents covering adaptation (but not comprehensively)[4]. CRAs were also included because of their role in the adaptation policy cycle. Other documents relevant to adaptation were also reviewed in some cases, including progress and evaluation reports, Nationally Determined Contributions (NDCs), National Communications (NCs), and findings from projects such as the TRATOLOW Project (Adaptation Component) or the Energy Community Project, specifically on the Western Balkans and Türkiye.

- **Interviews**: To confirm the findings on selected issues, interviews were conducted with representatives from 24 countries, who are nominated members of the Eionet (European Information and Observation Network) group on climate change impact, vulnerability and adaptation and with additional adaptation experts suggested and invited by these Eionet country representatives. Interviews were conducted only with countries where at least one adopted legislative act with adaptation provisions was identified during the desk research[5]. The aim was to clarify open questions and understand better the legislative framework in place, and to ask for complementary relevant information that could not be clearly derived from the desktop research. The scope of the interviews was limited to the screening criteria; no additional information was compiled for the analysis.
- **In-depth analysis of characteristics and conditions of adaptation policy** was conducted based on the compiled results of the adaptation policy document screening.

The report structure follows on the one hand, the Adaptation Policy Cycle, (see, for example, the Climate-ADAPT Adaptation Support Tool), and on the other hand, the new UAE Framework for Global Climate Resilience, with its four dimensions of the iterative adaptation cycle: a) Impact, vulnerability and risk assessment; b) Planning; c) Implementation and d) Monitoring, Evaluation and Learning. Figure 1 showcases the four steps of the adaptation cycle. Chapter 2 details the use of comprehensive national climate risk assessments, chapter 3 provides an overview of the adaptation policy landscape, chapter 4 discusses legal provisions for planning and implementing adaptation, and chapter 5 focuses on monitoring, evaluation and learning.

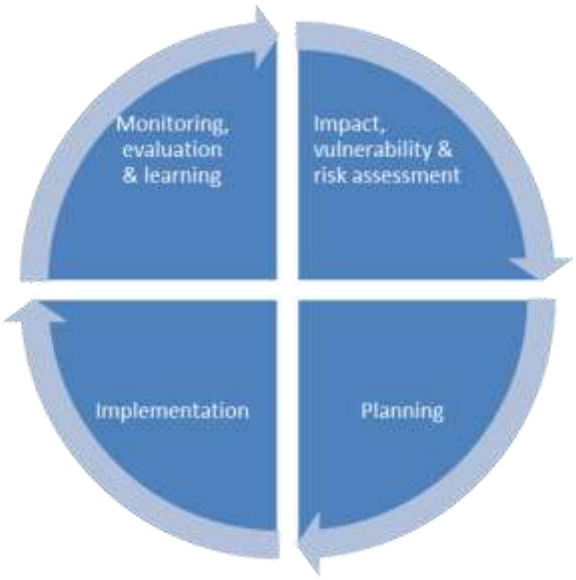


Figure 1. Schematic Adaptation Cycle, based on the UAE Framework for Global Climate Resilience

[4] Legislation other than climate laws were identified for 14 countries, however due to the challenges associated with collecting this level of information, there may be additional countries with relevant legislation that were not captured here. This a limitation of the assessment presented in the section of the report on Elements regulated by legal provisions.

[5] Interviewed countries include: Albania, Bulgaria, Croatia, Denmark, Finland, Germany, Greece, Hungary, Iceland, Ireland, Kosovo, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Norway, Portugal, Serbia, Slovakia, Spain, Sweden, Switzerland, and Türkiye

2. Comprehensive national Climate Risk Assessments

Key Messages

- Climate risk assessments (CRAs) are increasingly central to national adaptation policies. Twenty-one countries have completed structured assessments of climate impacts, vulnerabilities and risks, which are considered as comprehensive national climate risk assessments in this report.
- Regular revision cycles of national CRAs are clearly detectable only in a limited number of countries, with the frequency of periodical updates ranging from every three to eight years.
- Sixteen countries systematically integrate their assessments into the policy cycle and align them with the revision of adaptation policies, ensuring that the next generation of policies is informed by the latest climate risk information.
- However, the integration of CRAs with monitoring, evaluation and learning (MEL) remains limited, with only five countries explicitly linking the two processes.
- CRAs are increasingly mandated by legal provisions such as national climate laws to ensure that development and revision of adaptation policies is evidence-based and responds to evolving climate risks and vulnerabilities.
- Fourteen countries have legal obligations to perform CRAs, with most of the assessed countries requiring solely national assessments, while some mandate CRAs at both national and subnational levels.
- In these 14 countries, legal provisions to varying extents also regulate key elements of the governance of CRAs, such as update cycles, institutional responsibilities, coupling with adaptation policy revisions, and the involvement of advisory bodies and stakeholders.

Robust knowledge about climate risks is necessary to inform preventive and evidence-based planning, implementation and revision of adaptation policies, thereby focusing adaptation actions on key climate risks with urgent need for action and avoiding maladaptation. As climate adaptation is a distinctly cross-sectoral and multi-level policy field, comprehensive national CRAs are essential for a country-wide, systemic understanding of current and future climate risks, for identifying the main concerns requiring adaptation responses across sectors, systems and regions, and for informing cross-cutting adaptation strategies. They thus facilitate mainstreaming and multi-level policy integration, and enable harnessing the full potential of climate-resilient development and synergies. In contrast, merely sectoral, thematic or region-specific assessments that focus on single issues or parts of a country are often insufficient to inform broad national adaptation policies and risk remaining in isolated 'policy silos'. This report applies several minimum requirements to take a judgment whether available assessment products qualify as a 'comprehensive national CRA'. A comprehensive CRA, as used in this report, includes i) knowledge resources on climate change-induced hazards, impacts, vulnerabilities and risks that ii) address multiple potential effects of climate change, iii) have a multi- or cross-sectoral scope, iv) cover the entire national territory or even stretch beyond (e.g. including cross-boundary and transnational risks) and v) is finalized, published and publicly available. Moreover, the assessments of climate risks vi) need to be policy-relevant in that they have a role in informing national adaptation policies, regardless of being delivered as a stand-alone product (e.g. separate assessment report) or an integrated part of NAS or NAP documents. The underlying concept of 'comprehensive national CRAs' used is impartial to specific assessment methodologies.

While some kind of climate risk information or related preparatory work is available at national level in almost all of the 38 EEA member and cooperating countries, 21 countries (Austria, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Finland, Germany, Greece, Hungary, Ireland, Latvia, Netherlands, Norway, Poland, Portugal, Serbia, Spain, Sweden, Switzerland, Türkiye) have completed a comprehensive national CRA in line with the understanding outlined above. In the majority of these countries, the CRA has been prepared in a separate, dedicated assessment process and published as a stand-alone product, which

consecutively feeds into NAS/NAP development or revisions. Fewer countries (e.g. Croatia, Serbia) have evaluated climate risks as part of the drafting or updating of their NAS/NAP, incorporating evaluation results directly in the respective policy documents. In several countries (e.g. Austria, Hungary, Greece, Poland), both models coexist or are combined. For example, in Austria a reassessment of the knowledge base, building on a comprehensive literature review and meta-analysis of the latest evidence on climate vulnerabilities, impacts and risks, is conducted for each revision of the NAS and NAP. At the same time, the domestic research community regularly elaborates independent scientific assessment reports of both comprehensive and thematic scope in an IPCC-style approach, which are used as major sources of information in the review of the NAS/NAP-related knowledge base. In Hungary, multi-sectoral assessments of climate impacts and vulnerabilities have been directly incorporated into the **s**econd NAS from 2018, while a later report on the "Scientific assessment of the effects of climate change in the Carpathian Basin" (2020) represents a stand-alone national CRA. In parallel, the results of a series of separate, sector-related and thematic assessments are made available via the web-based National Adaptation Geo-Information System (NAGiS). In addition, some countries (e.g. Ireland, Spain) draw on preceding sectoral assessments, which were initially produced as part of SAPs, as foundation for preparing consolidated comprehensive CRAs.

The dates of origin of the comprehensive national CRAs identified range from 2006 to 2024. Eleven countries (Austria, Croatia, Finland, Germany, Hungary, Latvia, Netherlands, Poland, Serbia, Spain, Türkiye) have up-to-date or rather recent assessments that are not older than five years, while in four countries (Bulgaria, Denmark, Portugal, Sweden) the CRA-related knowledge base dates back ten or more years and may thus be considered outdated. According to available information, some countries (including Ireland, the Netherlands, Portugal, Serbia, Switzerland) are currently working on updated stand-alone national CRAs or have scheduled them in the near-term future.

The regularity of CRA updates varies significantly when looking at revision cycles for updating comprehensive national CRAs. Clearly traceable, regular updating cycles are established only in a fraction of the 21 countries where a national CRA is available. The most frequent time interval is five years (Austria, Croatia, Bulgaria, Ireland, Spain), but countries also practice intervals of eight years (Germany, Finland), or three years (Serbia). Arrangements for periodical revisions of CRAs can derive from statements in NAS/NAP policy documents, policy commitments by government resolutions, legal obligations in climate laws, or are simply part of established routines. In all other countries with national CRAs, revision cycles are either not defined, or unclear, or seem to be implicitly coupled to the timing of NAS/NAP revisions.

In 16 (out of 21) countries (Austria, Bulgaria, Croatia, Czechia, Denmark, Finland, Germany, Greece, Netherlands, Poland, Portugal, Serbia Spain, Switzerland, Türkiye), national CRAs are an integral part of the adaptation policy cycle and are aligned with revisions of the NAS, NAP and/or specific adaptation plans (Delta Program in the Netherlands) in terms of timing, frequency and contents. They thus play a significant policy-relevant role by ensuring that improvements in adaptation policies are based on the latest available climate risk information. In comparison, there is significantly less evidence on the systematic coupling of CRAs with the monitoring, evaluation and learning (MEL) systems for adaptation. If planned accordingly, both steps of the policy cycle can support each other, when e.g. MEL processes are designed to gather new climate risk information, or when the evaluation of adaptation strategies exposes additional knowledge needs. While such linkages can be verified for five countries (Austria, Czechia, Germany, Netherlands, Switzerland), information for several other countries is unclear or not available, and not all countries have a working MEL system in place yet (e.g. Croatia, Denmark, Hungary, Poland).

Out of the 21 countries with a comprehensive national CRA, 14 countries (Austria, Croatia, Denmark, Finland, Germany, Greece, Hungary, Ireland, Netherlands, Portugal, Serbia, Spain, Sweden, Switzerland) have prepared additional assessments of climate change impacts, vulnerabilities and risks. These studies can enrich and deepen the knowledge base and inform targeted sectoral adaptation actions. They have varying partial, sectoral, thematic or subnational scopes, and may include comprehensive national

assessments of older origin that have been superseded by studies that are more recent. Sectoral assessments are most numerous in countries with SAPs in place (e.g. Finland, Ireland, Spain, Sweden). For example, 32 sectoral climate risk assessments prepared by national sector authorities are available in Sweden, and Ireland has based its SAPs on sectoral climate risk assessments for a range of climate-sensitive key sectors. Other examples include Greece, where regional CRAs are a mandatory part of Regional Adaptation Action Plans (RAAPs), Sweden with 21 regional CRAs, and Austria, where the scientific community has published up to now four independent thematic assessment reports on climate change issues.

3. Overview of adaptation policy landscape

Key Messages

- All countries have an adopted national adaptation policy addressing climate change impacts, demonstrating broad commitment to enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change.
- These approaches, varying from climate laws or examples of other legislation addressing adaptation to strategic frameworks like national adaptation strategies and plans, reflect diverse approaches to climate adaptation across Europe.
- Adaptation priorities across countries remain largely consistent through the varied adaptation policy developments and updates over the last years, reflecting the long-term nature of adaptation. Enhanced collaboration across and between governance levels continues to support more systemic adaptation policies, including their implementation.

3.1. National Adaptation Strategy

National adaptation strategies (NASs) are high-level policy documents that outline a country's long-term vision and strategic approach to climate adaptation, serving as frameworks for coordinating adaptation activities across sectors and governance levels. These strategies summarise climate-related risks and vulnerabilities and identify key actors and sectors requiring action. By setting a comprehensive framework, NASs provide a basis for more detailed adaptation planning and prioritisation, support the coordination of adaptation actions both horizontally and vertically, and promote awareness and engagement among stakeholders (EEA, 2020). Among the countries assessed, the majority has established a NAS to address climate challenges, with only four countries currently missing one. Some countries, like Austria, Germany and Switzerland, avoid referring to their strategy as strictly “national” and instead adopt a broader whole-country approach, designating responsibilities across levels of governance. This reflects the understanding that adaptation requires coordinated efforts across all levels of governance, from national to local levels, addressing both public and private actors and ensuring that responsibilities and risks are shared among various stakeholders or risk-owners. Typically, a NAS is presented as a stand-alone document; however, countries such as Austria, Bulgaria, Luxembourg, Serbia and Türkiye, have integrated their NASs with their NAPs. Additionally, several countries, such as Austria, Ireland, Lithuania, Serbia and Slovenia label their strategic documents as frameworks, agendas or contexts, but these documents ultimately serve the same purpose as a NAS. In Bosnia and Herzegovina, the Low Emission Development Strategy serves as the overarching climate strategy, encompassing both adaptation and mitigation efforts. Similarly, Poland and Spain refer to their NAS as a “plan”.

Most ongoing strategies have been developed since 2016, with Finland’s NAS dating back as early as 2005 and Germany’s to 2008. Revision cycles for NASs vary widely from country to country, with an average cycle of five years commonly cited in adaptation-relevant legislation or within the NAS itself. However, in practice, this cycle is not always consistently followed. In some cases, such as Croatia, the climate law specifies a five-year revision cycle but also states that updates should be conducted as necessary.

The process of developing and overseeing NASs is usually led by the ministries of environment, though other ministries, such as those dedicated to climate or civil protection, take the lead in some countries, such as in Austria and Greece. The responsibility for implementing these strategies is primarily assigned to line ministries or sectoral agencies, including regional and local authorities, depending on the country's governance structure and distribution of responsibilities and risk ownership.

Effective horizontal and vertical coordination can enhance policy alignment and implementation consistency, though varying levels of detail across countries indicate differences in coordination quality. Most countries (24 out of 38) have established mechanisms for horizontal coordination across various sectors, though the level of detail provided varies. In Portugal, for instance, horizontal coordination is ensured by the NAS Coordination Group, led by Portuguese Environment Agency, which chairs the responsibility for monitoring and coordination with other organisms of thematic areas, sectoral

representatives, Autonomous Regions and National Association of Municipalities. In Germany the work surrounding the NAS is monitored and coordinated within the federal government under the leadership of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). Via the Interministerial Working Group "Adaptation to Climate Change" (IMAA) all federal ministries work together, regularly coordinate their activities and continually set new goals in order to create the conditions for climate adaptation. Additionally, sectoral working groups play a role in coordinating initiatives within specific sectors, contributing to the implementation of national objectives. Such examples show how adaptation is moving from general planning to practical, organized multi-level frameworks that facilitate cross-sector collaboration.

Vertical coordination, which involves collaboration between national and subnational levels, is less commonly addressed in the NAS and often less detailed. However, in some countries, such as the Netherlands, these mechanisms are well established through participatory processes that actively involve provinces, municipalities, water boards and societal actors. In some cases, information on vertical coordination is either missing or unclear in policy documents, while in others, such coordination exists, but it is not guided by formalized procedures. Germany has a robust multi-level coordination mechanism in place. The Standing Committee on Adaptation to Climate Change Impacts (StA AFK), established by the Conference of Environment Ministers of the Federation and the Länder (UMK) in 2009, serves as the main coordination mechanism for multi-level cooperation. It also provides a forum for federal states to contribute to the NAS. This coordination is further mandated by the Federal Adaptation Act, which outlines the general framework for cooperation between the federal and federal state (Länder) levels.

Institutional advisory bodies support the NAS development process in 16 countries (Albania, Bulgaria, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Lithuania, Netherlands, Portugal, Romania, Serbia, Slovakia, Spain, Sweden), although in nine countries, these advisory bodies were not specified or mentioned in the available documents. In three countries, the role or presence of such advisory bodies is less clear.

In many cases (see chapter 4), the development of a NAS is grounded in climate risk assessments, which are integral to understanding the vulnerabilities and risks posed by climate change. However, in a few instances, the role of these assessments in shaping the NAS remains less defined or less clearly documented.

Stakeholder involvement or engagement is a common element of NAS development, often through consultations, active participation, or co-creation processes. In some cases, stakeholders are also involved in collaborative decision-making, reflecting a participatory approach to climate adaptation. For example, in Austria, France and Germany, other stakeholders, including private sector representatives and other members of the public are consulted.

3.2. National Adaptation Plan

National adaptation plans (NAPs) operationalize national adaptation strategies into actionable plans, often informed by CRAs to address specific vulnerabilities. NAPs usually include specific actions, timeframes and resource allocations needed to achieve adaptation goals. They provide operational guidance on how to implement broader strategies, often including sector-specific adaptation actions and milestones. Twenty seven countries (Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Kosovo, Latvia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Portugal, Romania, Serbia, Slovakia, Spain, Switzerland, Türkiye) have a NAP in place. Most of these NAPs are relatively recent, with the earliest examples emerging in 2012 from countries like Austria and Denmark. While Austria refers to its NAP as an "Action Plan" and Spain labels its NAP as a "work programme," these documents generally follow the same structure as traditional NAPs.

As with NASs, the development and oversight of NAPs are typically led by ministries of the environment. Their implementation is distributed based on responsibility and risk ownership, with relevant line

ministries, sectoral agencies, and local or regional authorities managing the process as well as responsibilities partly for the population as well as the private sector.

Horizontal coordination mechanisms or bodies are present in most assessed countries (Albania, Austria, Belgium, Bulgaria, Cyprus, Czechia, Denmark, Finland, France, Germany, Hungary, Kosovo, Latvia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Portugal, Romania, Serbia, Slovakia, Spain, Switzerland, Türkiye). In some countries, such as Finland, implementation is carried out through SAPs led by line ministries. In many countries the NAS and NAP are coordinated by the same body or mechanism. For example, in Lithuania, the National Climate Change Committee was established to consult on climate change policy development and coordinate its implementation. Vertical coordination mechanisms, however, are less common.

Review cycles for NAPs vary significantly. Similar to NAS revision processes, some countries mandate NAP updates through legal provisions, while in others, the requirement is embedded within the NAP itself rather than specified by additional legislation. Eight countries (Albania, Croatia, Finland, Germany, Iceland, Kosovo, Montenegro, Spain) have a legal mandate to revise their NAPs, generally every three to five years (see chapter 4.3). Additionally, 11 other countries include a revision requirement directly within their NAP. The details of how and to what extent NAPs are updated and revised based on CRAs is not always explicitly defined in policy documents. Since NAPs are developed to operationalise NASs, it can be inferred that they are likely based on CRAs much like how NASs are, even if this connection is not clearly laid out.

MEL systems are more widely used to track the progress of NAP implementation, with updates to NAPs often based on MEL findings in countries where such systems are established (see chapter 5.2).

3.3. Sectoral Adaptation Plan

SAPs allow countries to address sector-specific climate risks, making adaptation more targeted and effective in high-impact sectors like agriculture and health. Five countries (Finland, Ireland, Slovenia, Spain, Sweden) have them in place. SAPs are gradually becoming more common, as several countries are beginning to require their development through climate legislation (see chapter 4.2). This trend reflects a shift toward adaptation strategies that are increasingly tailored to sectoral needs, particularly in high-impact areas, such as health, coastal management, agriculture and forestry.

In countries where SAPs are in place, they target specific sectors, such as agriculture in Ireland and Slovenia, coastal areas in Spain, and health in Finland. Ireland and Sweden have an extensive coverage of sectors through their SAPs, including agriculture, forestry, biodiversity, transport, the built environment, flood risk management, health, among other sectors. Each SAP is led and implemented by the ministry responsible for the respective sector, while the role of the ministry leading the climate change adaptation work in the country often steers the broader adaptation process.

3.4. Examples of other documents addressing adaptation

In addition to NASs, NAPs and SAPs, 21 countries[6] (Albania, Austria, Belgium, Bulgaria, Croatia, Czechia, France, Germany, Greece, Hungary, Iceland, Kosovo, Liechtenstein, Luxembourg, Netherlands, North Macedonia, Poland, Portugal, Slovakia, Slovenia, Spain) have other policy documents addressing climate change adaptation. These include strategies for disaster risk management, agriculture and water and drought prevention. In some cases, these documents may not strictly qualify as policies, highlighting the need for clarity on what constitutes a relevant adaptation policy.

[6] Other documents addressing adaptation were identified for 21 countries, however due to the challenges associated with collecting this level of information, there may be additional countries with relevant documents that were not captured here.

4. Legal provisions for planning and implementing adaptation

Key Messages

- Eighteen countries have adopted dedicated national climate laws that include provisions on adaptation, signalling a trend of stronger commitment towards adaptation policymaking and legally binding adaptation frameworks. In some countries without a climate law, other legislative acts (e.g. spatial planning or territorial development laws) are used to regulate specific features of adaptation governance systems.
- Climate laws in general do not set measurable targets for adaptation. Few countries define qualitative objectives for adaptation in their laws or name the National Adaptation Strategy (NAS) or National Adaptation Plan (NAP) as the tool to specify the goals of adaptation.
- The climate laws vary in scope; some mandate actions solely at the national level, while others extend requirements to subnational levels, mandating regional and local authorities to develop and implement adaptation plans, strategies, concepts or the like.
- Aspects and/or elements of adaptation policy are regulated by legal provisions in 24 countries, with different scopes and depths of detail.
- Across the 24 countries, and to varying extents, the aspects explicitly governed by regulations relate to mandates and revision cycles for subnational adaptation policies, obligations for comprehensive risk assessments (CRAs), political responsibilities, establishment of coordination bodies and advisory bodies, reporting obligations, and obligations for adaptation planning by sectoral and subnational authorities.
- Sixteen countries have legally defined mandatory revision cycles for their national adaptation policy documents, i.e. NAS, NAP or SAP.
- At least six countries have legal provisions mandating institutionalized national bodies, such as inter-ministerial working groups or climate change committees, with overseeing horizontal and vertical coordination of adaptation policies and processes.
- Independent institutional advisory bodies for policy advice and/or scientific counselling of adaptation policies are legally mandated in at least ten countries. In at least nine countries, legal provisions assign further specific roles to additional actors in adaptation processes or stipulate a general cooperation requirement to public authorities.
- Legal requirements for adaptation planning by subnational authorities are in place in 11 countries, addressing to differing extents local authorities, regional authorities, or both.
- Legal mandates for mainstreaming adaptation across sectoral policies have also been strengthened and are now in place in 16 countries, allowing adaptation goals to permeate various regulatory frameworks and enhance coherence across policy fields and sectoral authorities.

Twenty four EEA member and cooperating countries have adopted legal provisions governing climate change adaptation[7]. The types and characteristics of legislation differ significantly across countries, ranging from climate (and adaptation) laws to other legal acts, laws or ordinances addressing some aspects of adaptation. The main focus of this assessment is on climate laws addressing adaptation; however information is also included on other types of legislation governing aspects of adaptation where available.

4.1. National climate laws

Eighteen countries have climate laws that address adaptation (see Table 1). The coverage of adaptation and obligations set for different aspects of adaptation vary largely between countries. More comprehensive climate laws set out the adaptation framework and include requirements for the process, clarify roles and responsibilities, and define outputs/contents to be delivered within each step of the policy

[7] Legislation other than climate laws were identified for 14 countries, however due to the challenges associated with collecting this level of information, there may be additional countries with relevant legislation that were not captured here. This a limitation of the assessment presented in the section of the report on Elements regulated by legal provisions.

cycle (CRA, planning, implementation and MEL), whereas others focus on selected steps of the policy cycle. The differences in adaptation mandates, particularly between countries with national-only obligations versus those with subnational requirements, can affect the scope and enforcement consistency of adaptation actions.

Table 1 Climate laws including adaptation in EEA countries

Country	Legislation titles (translated)
Albania	Law No. 155/2020 Climate Change
Bulgaria	Climate Change Mitigation Act
Croatia	Law On Climate Change and Protection of the Ozone Layer
Finland	Climate Law 10.6.2022/423
Germany	Federal Climate Adaptation Act (KAnG)
Greece	National Climate Law - Transition to Climate Neutrality and Adaptation to Climate Change, Emergency Provisions to Address the Energy Crisis and Protect the Environment
Hungary	XLIV/2020 Law on Climate Protection Act 2007/LX – Implementation Framework for the UNFCCC and the Kyoto Protocol
Iceland	2012 Act no. 70 on Climate Change
Ireland	Climate Action and Low Carbon Development Acts 2015 to 2021
Kosovo	Law No. 08/L-250 on Climate Changes
Luxembourg	Law of December 15, 2020 Relating to the Climate and Amending the Amended Law Of May 31, 1999 Establishing a Fund for the Protection of the Environment
Malta	Chapter 543 Climate Action Act
Montenegro	Law on Protection from Negative Influences of Climate Change
Norway	Climate Change Act
Portugal	Law No. 98/2021 of 31 December Climate Framework Law
Serbia	Law on Climate Change
Spain	Law 7/2021, of May 20, on Climate Change and Energy Transition
Switzerland	Federal Act on the Reduction of CO2 Emissions (CO2 Act) of 23 December 2011 (Status as of 1 January 2022) Federal Law on Climate Protection Objectives, Innovation and Strengthening Energy Security (KLG) of September 30, 2022

Climate laws have been adopted or updated in the last five years in 15 of the reviewed countries and even the oldest available laws are less than ten years old (2015 Bulgaria and Malta, and 2017 Norway). Some climate laws are currently under revision, but have not yet (as of July 2024) been adopted (e.g. Albania, Croatia). Climate laws in half of the 18 countries focus only on the national level (Bulgaria, Finland, Hungary, Iceland, Kosovo, Luxembourg, Malta, Montenegro, Norway), while half of the countries have laws that include both national and subnational obligations (Albania, Croatia, Germany, Greece, Ireland, Portugal, Serbia, Spain, Switzerland). The Hungarian climate law addresses climate change on a macro-regional scale (in the Carpathian basin). Germany is the first and only European country to have a standalone climate adaptation law: The Federal Climate Adaptation Act was adopted in December 2023 and entered into force in July 2024 as a binding legal framework for climate adaptation at federal, Länder and local levels (See Box A 1).

Adaptation is established as an objective of national climate laws in several countries , but the objectives of adaptation are not often stated (only in 3 of the 18 countries). No country defines clearly measurable goals or targets for adaptation (as of July 2024). When qualitative objectives of adaptation are included (Croatia, Germany, Spain), they tend to be very general, mentioning reducing vulnerability and increasing resilience (Croatia, Germany), with some specific objectives only included in one case (Spain), but even then, with the explanation that the objectives will be presented in a NAS. Legislation for some other countries also mention that the goals of adaptation will be set or specified in the NAS (Croatia, Germany,

Portugal). Sectoral objectives for adaptation are detailed only in the Spanish legislation, which also states for some sectors that adaptation objectives are to be included in a NAS. Subnational objectives for adaptation are not defined in the climate laws.

Box A 1 Case Study: The German Federal Climate Adaptation Act

With the Federal Climate Adaptation Act (KAnG)[8], the federal government of Germany provides a binding framework for climate adaptation at national, Länder and local level. It has several key provisions as follows:

- The Federal Government publishes a climate risk analysis based on the current state of science. The climate risk analysis must be updated at least every eight years.
- The Federal Government is thus committed to presenting a precautionary climate adaptation strategy with quantifiable and measurable goals, which are regularly updated. The achievement of these goals will be reviewed by means of regular monitoring. The sectors to be covered by the strategy are listed in the KAnG and cover all relevant sectors of Germany.
- The Länder (federal states) are instructed to present and implement their own climate adaptation strategies, drawing on their own climate risk and climate change impact analyses in line with the latest scientific findings.
- The Länder should also ensure that local climate adaptation concepts containing specific actions are drawn up, based on these risk assessments. They are required report to the federal government on the extent to which corresponding concepts are available for municipalities or districts (local level). The federal states can also exclude smaller municipalities from the requirement to have an adaptation concept, if these are covered by a local adaptation concept at county level.
- A requirement to be considered by relevant public authorities is an interdisciplinary and integrated approach when making plans and decisions.
- The federal government plans to regularly collect data on the damage caused by extreme weather (loss/costs) and on the federal government's expenditure on climate adaptation.
- However, there are no sanctioning mechanisms if a federal state or municipality and district does not follow the law.

The federal government also provides financial support for the implementation of the law, such as through the 'Measures to adapt to the consequences of climate change' (DAS) funding program.

4.2. Examples of other legislation addressing adaptation

Besides climate laws, adaptation is addressed in several other types of legislation. In this report, the focus is also on examples of robust national legislative acts establishing requirements for some elements of adaptation, but not on transposed legislation based on EU directives and regulations (e.g., Floods Directive, Environmental Impact Assessment Directive, Civil protection Mechanism, which also tend to address aspects of adaptation). Under this assessment, 14 countries (Denmark, Finland, France, Germany, Hungary, Netherlands, North Macedonia, Norway, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland) were identified as having legislation, other than climate laws, setting requirements for adaptation[9]. Several of these countries also have in addition climate laws addressing adaptation. In several countries legislation on water management and freshwater supply (e.g. Netherlands), nature protection (e.g., Finland, Slovenia), building (e.g., Spain) and spatial planning (e.g. Denmark, France, Slovakia, Slovenia, Sweden) include obligations for adaptation. For example, the Delta Act (2012) is the Netherlands' key legislation governing climate adaptation, particularly for water management and flood resilience, through the Delta Programme. The Act stipulates that the Programme must be revised annually to ensure that the country is adequately protected against flooding, has good freshwater supplies, and is well adapted to extreme climate effects. It requires that a Delta Commissioner directs the drafting and implementation of the Delta

[8] https://www.recht.bund.de/bgbl/1/2023/393/VO

Programme and provides for a dedicated Delta Fund as one source of financing for the Programme. In other countries, adaptation strategy revision (e.g., Hungary), adaptation planning (e.g. North Macedonia, Norway), climate risk assessment (e.g. North Macedonia), monitoring of community adaptation measures (e.g. Serbia), and coordinating and reporting on adaptation (e.g. Switzerland) are addressed in other more procedural types of legislation. For example, in Sweden, the Ordinance (2018:1428) on climate adaptation requires national government agencies and regional county administrative boards to integrate climate adaptation measures into their operations, strengthening resilience to climate impacts.

4.3. Elements regulated by legal provisions

Legislation other than national climate laws were identified for 14 countries, however due to the challenges associated with collecting this level of information, there may be additional countries with relevant legislation that were not captured here.

Across all components of national adaptation policies investigated in this report, most countries have at least some kind of legal provisions in place that are regulating relevant parts of adaptation policy structures and processes. Twenty four countries with regulatory approaches related to significant aspects of adaptation policies have been identified: Albania, Bulgaria, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Kosovo, Luxembourg, Malta, Montenegro, Netherlands, North Macedonia, Portugal, Serbia, Slovakia, Slovenia, Spain, Sweden and Switzerland. National climate laws are increasingly fulfilling a key role in institutionalising adaptation policy-making and governance: in 17 out of 18 countries with national climate laws addressing adaptation to differing extents (Albania, Bulgaria, Croatia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Kosovo, Luxembourg, Malta, Montenegro, Portugal, Serbia, Spain, Switzerland), these are also the main source of mandatory and enforceable requirements for significant aspects of adaptation policies. In seven further countries (Denmark, France, Netherlands, North Macedonia, Slovakia, Slovenia, Sweden), other legislative acts are used to regulate specific features of adaptation governance systems. For example, in France, Slovakia and Slovenia, national spatial planning or territorial development laws require consideration of climate change adaptation in various types of planning documents. In Sweden, the Adaptation Ordinance regulates the work of 32 agencies and all 21 county administrative boards in regard to adaptation.

The legal provisions can include very detailed (e.g. Switzerland) or rather generic requirements for adaptation such as that the government should implement short-, medium- and long-term actions without specifying them further (e.g. Hungary). As legal provisions are often of recent origin, implementation in practice often is only getting started. In addition, absence of legal provisions by no means excludes that respective practices are nevertheless established in a country. Some climate laws are currently under revision, but not yet (as of July 2024) adopted (e.g. Albania, Croatia).

Legal mandate for adaptation policies

Most countries with regulatory approaches for climate adaptation have a legal mandate for developing and/or revising an adaptation policy. This legal provision for developing an adaptation policy document can be in different formats, such as e.g. a “single” NAS (Luxembourg, Malta) or a “single” NAP (Iceland, Montenegro) or SAPs (Sweden). It can also be for both, a NAS and a NAP (Albania, Bulgaria, Croatia, Germany, Iceland, Ireland, Kosovo, Portugal, Serbia, Spain and Switzerland), but also a NAS, NAP and SAP (Spain), a NAS, NAP and subnational (Germany), NAS, SAP and subnational (Ireland, Portugal) or a NAS and subnational (Greece).

The legal mandate can include requirements for developing a NAS and a NAP as well as its implementation (Croatia), foreseen with a timeline such as a period of five years. In Germany, for example, the Federal Climate Adaptation Act also requires legal entities under public law to set up and implement climate adaptation concepts. It also foresees requirements for subnational adaptation concepts for Länder, districts and municipalities. In addition, integrating climate adaptation in plans and decisions of 'bodies discharging public functions' is required. The Greek climate law requires a NAS (ESPKA), with clear elements that need to be an integral part of the strategy such as objectives and guiding principles, assessment of the expected climate changes, identification of the priority sectors as well as proposed

measures and actions. Hungary's Act 2007/LX (Implementation Framework for the UNFCCC and the Kyoto Protocol) states the need to elaborate and regularly revise a Climate Change Strategy at national level and thus provides the legal mandate to the government. Sweden has a government's Ordinance on Agencies' Climate Change Adaptation that requires climate adaptation work on the part of government agencies, including an action plan, with allocation of responsibilities and procedures. In Switzerland, the 2023 CO_2-Act mandated the federal level to coordinate development, implementation and revision of national adaptation policies (NAS and NAP). The legislation states that federation and cantons (national and subnational level) shall ensure that the necessary measures to adapt to and protect against climate change are taken.

Climate Risk Assessments

Climate risk assessments (CRAs) are increasingly institutionalized through mandatory legal requirements, which are often enacted under national climate laws and regulate varying key elements of the governance related to such assessments. Enforcing the availability of up-to-date climate risk information and periodical renewal of CRAs through binding regulations intends to ensure that changes in risk and vulnerability levels are accounted, and that policy revision is evidence-based. It is also in favour of avoiding stranded investments, lock-in effects and maladaptation (Leitner et al., 2023).

Fourteen countries (Albania, Croatia, Finland, Germany, Greece, Iceland, Ireland, Kosovo, Montenegro, Netherlands, North Macedonia, Serbia, Spain, Switzerland) have a legal obligation in place to perform CRAs at the national and/or subnational level, either as stand-alone assessment or as integral part of adaptation policy revisions (NAS/NAP, SAP, or subnational adaptation plans). Eight (Croatia, Finland, Iceland, Montenegro, North Macedonia, Serbia, Spain, Switzerland) out of 14 countries, have a statutory requirement to perform a CRA 'only' at national level , and four countries (Germany, Greece, Kosovo, Netherlands) have an obligation for both national and subnational CRAs, while in Finland regional risk assessments are undertaken only if deemed necessary. Most countries requiring CRAs (12 out of 14) have implemented obligations in their national climate laws, and Germany did so in its adaptation act. The only exceptions are North Macedonia, where the National Environmental Law requires climate risk and vulnerability assessments as part of the development of the National Plan on Climate Change, and the Netherlands, where the Delta Law stipulates periodical re-assessments of water-related (regional) CRAs for the Delta Programme. Seven (Bulgaria, Hungary, Luxembourg, Malta, Montenegro, Norway, Portugal) out of 18 countries with climate laws addressing adaptation, and five (Denmark, France, Slovakia, Slovenia, Sweden) out of seven countries with other legislative acts governing elements of adaptation do not have requirements related to CRAs in their legal provisions.

Two different models of obligatory CRAs can be distinguished. Firstly, about half of the reviewed countries (e.g. Finland, Germany, Greece, Ireland, Iceland, Spain, Switzerland) define explicit legal requirements for dedicated climate risk assessments and their delivery in stand-alone reports. Secondly, in the remaining countries (e.g. Albania, Croatia, Kosovo, Montenegro, North Macedonia) legal provisions imply implicit requirements for such assessments as part of NAS/NAP development or review, for example by stipulating that adaptation policy documents need to based on assessments of impacts, vulnerabilities and risks.

Apart from obligations for the presence of CRAs, climate laws or other pieces of legislation regulate specific characteristics of the CRA-related governance framework to varying extents. These regularly include update cycles, alignment with adaptation policy-making, i.e. the use of climate risk information for revisions of adaptation policy documents (NAS, NAP, SAP, sub-national adaptation plans), institutional responsibilities for conducting and/or coordinating CRAs, and the involvement of advisory bodies or stakeholders. Eight (out of 14) countries (Albania, Croatia, Finland, Germany, Greece, Kosovo, North Macedonia, Spain) have defined compulsory revision cycles for their CRAs, with time intervals ranging from every four to every eight years. Ten countries (Croatia, Finland, Germany, Greece, Kosovo, Montenegro, North Macedonia, Serbia, Spain, Switzerland) have established institutionalized linkages between CRAs and national or subnational adaptation policy documents. Most often, respective requirements for reviewing and updating the climate risk knowledge base are coupled to revisions of the NAS and/or NAP.

In addition, CRAs are a mandatory component also of Regional Adaptation Action Plans (RAAPs) in Greece, and sectoral CRAs are required as part of SAPs in Spain. In seven countries (Germany, Iceland, Kosovo, Montenegro, Serbia, Spain, Switzerland) legal provisions explicitly mandate specific institutions to prepare and publish climate risk analyses. Overall responsibility is usually allocated to the national authorities that are politically responsible for national adaptation policy-making in general, i.e. the competent Ministries or Federal Offices having policy ownership for adaptation. In some cases (e.g. Iceland, Montenegro, Spain), collaboration with other national public entities, e.g. ministerial departments (Montenegro), the Meteorological Office (Iceland) or Autonomous Communities (Spain) is explicitly mentioned in the laws. Two countries (Iceland, Kosovo) have been identified where legal provisions assign roles in CRAs to advisory bodies, e.g. the Climate Council in Iceland.

Box A 2 Examples of legislative requirements for CRAs

In Albania, for example, the Climate Law states the obligation for a CRA, which is an integral part of the NAP, including review of the CRA every four years. The Croatian law as well as the NAS foresees that any national adaptation policy document needs to be based on the assessment of impacts and vulnerabilities and that the respective knowledge needs to be constantly updated and enhanced, which implicitly means that CRA renewals are in line with the NAS/NAP revision cycle of every five years. The Finnish Climate Act requires that updated NAPs shall include an up-to-date assessment of climate risks and vulnerabilities and that a regional risk assessment is to be carried out when necessary. In Germany, the Federal Climate Adaptation Law rules that the forthcoming new precautionary national adaptation strategy (which is to be integrated with the new NAP) shall be updated every four years based on the national CRA, which has to be renewed at least every eight years. Thus, in the future every CRA will feed into two revision cycles of the NAS. The German adaptation act also requires that federal states develop, implement and update their own adaptation strategies in five-year intervals, which must be based on a subnational Climate risk assessment. Another example is the Greek climate law, which requires that the NAS and RAAPs (Regional Adaptation Action Plans) are based on CRAs as well as that the updated CRA is part of NAS and RAAP revisions, which are required every five years. Another example is Iceland, where scientific reports on the effects of climate change on nature and society are regularly commissioned by the Ministry and fed back into adaptation policy documents. In Ireland, CRAs are required as part of statutory sectoral adaptation plans, which are stipulated by the Irish Climate Law. Kosovo, for example, has a Climate risk assessment as mandatory part of the NAP mandated in the legislation. In North Macedonia, the National Environmental Law requires that the development of the National Plan on Climate Change is based on climate risk and vulnerability assessments. The Spanish Climate Law requires a national CRA report every five years. In Switzerland, the CO_2 Act and Ordinance to the new Climate Protection Act provide the legal mandate to the Federal Office for the Environment, as the national authority responsible for coordinating adaptation policies, to regularly analyse climate risks, as basic knowledge necessary for adaptation measures.

Legal mandate for revision cycles and time horizons

Revision cycles are obligatory in 15 countries (Albania, Croatia, Finland, Germany, Greece, Iceland, Ireland, Kosovo, Luxembourg, Malta, Montenegro, Netherlands, Portugal, Spain, Sweden). Of these, four countries have a requirement for revising the NAS and NAP (Albania, Croatia, Germany, Kosovo), three countries for NAP (Iceland, Montenegro, Spain), two countries for the NAS and SAP (Ireland, Portugal), two countries for the NAS (Luxembourg, Malta), one country for the NAP and SAP (Finland), one country for the NAS and subnational plans (Greece – Regional Adaptation Action Plans (RAAPs)) and one for SAP and RAPs (Sweden). The Netherlands requires the annual revision of the Delta Programme.

Within different legislation, different revision cycles are foreseen. Croatia, for example, foresees a five-year period for revising its Adaptation Strategy, with an accompanying action plan for its implementation. Germany has the legal requirement to update the NAS and NAP every four years. The Greek NAP is evaluated at least every five years and revised, if required, after an opinion of the National Council for Adaptation to Climate Change. The adaptation action plan in Iceland shall be reviewed no less frequently than every four years. In Kosovo, the NAS shall be compiled for a ten-year period and reviewed every five

years, and the Action Plan is prepared for the period of three years. The Adaptation Strategy of Luxembourg has a time-horizon of at least fifty years and the document shall be revised/updated every five years, where applicable. Montenegro requires a NAP update every two years. In North Macedonia, the National Plan on Climate Change is adopted for a six-year period. The Portuguese climate law has the mandatory requirement to revise the NAS every five years, with the next one foreseen for 2025. The Swedish Ordinance requires an update of the action plans (SAP) in the event of significant changes to operations or at least every five years.

Legal base for political and/or coordination responsibilities

Being a cross-sectoral, multi-level and multi-issue policy field, effective and coherent policy making on climate adaptation depends on adequate governance mechanisms that enable coordination, cooperation, and information exchange to integrate adaptation into relevant sector policies and mainstream it across multiple administrative levels. This requires appropriate institutional set-ups, mechanisms and arrangements, in particular dedicated actors or working bodies tasked with coordination responsibilities (EEA, 2014, 2020; Leitner et al., 2023; Climate-ADAPT, 2024a). Institutionalising coordination bodies and specifying their roles, based on a clear legal mandate with enforceable administrative rules, increases the political relevance of adaptation, strengthens the legitimacy of adaptation coordinators, can crucially strengthen horizontal and vertical policy integration, and may benefit the enfolding of complementary, more informal governance modes (Leitner et al., 2023; EEA, 2022).

Sixteen countries have the political and/or coordination responsibilities for developing and/or implementing national adaptation policies within a legal provision, namely NAS and/or NAP (Albania, Bulgaria, Croatia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Kosovo, Luxembourg, Malta, Portugal, Serbia, Spain, Switzerland). In Montenegro, for example, the law stipulates that the Working Group on Climate Change within the National Strategy for Climate Change (NCSD), in collaboration with the line ministry's climate change directorate, will oversee the NAP updates every two years as necessary. The NCSD serves as a coordination mechanism in this process. In the Netherlands, the independent political responsibility for the Delta Programme lies with the Delta Commissioner. The body of the state administration responsible for the affairs of the environment with other bodies has the political and coordination responsibility for the National Plan on Climate Change.

Box A 3 Examples of political and coordination responsibilities for developing and/or implementing national adaptation policies in countries with legal provisions

Albania, for example, has a leading Ministry, an interministerial working group and the adaptation policies are approved by the Council of Ministers. The competent state administration body for environmental protection has the political and coordination responsibility in Croatia. In Germany, the federal government, within its competencies, has the political responsibility of the development and implementation of the NAS. The political and coordination responsibilities in Greece are with the Ministry of Climate Crisis and Civil Protection. In Hungary, the National Assembly invites the Government to implement short-, medium- and long-term climate mitigation and climate adaptation measures. The Minister of the Environment, Energy and Climate has the political and coordination responsibility in Iceland and in Kosovo, the Ministry responsible for the environment for the NAS. In the climate law of Montenegro, the line ministries and the NCSD are key actors in monitoring and revising the NAP. In Serbia, the political and coordination responsibilities for developing the NAS and the NAP lie with the Ministry of Environmental Protection. In Sweden, the responsibilities lie within agencies own share of operations and must report to the Swedish Meteorological and Hydrological Institute (SMHI) and the Ministry of the Governments Offices, which the agency belongs to.

Vertical and horizontal integration

Bodies and mechanisms for coordinating the planning, implementation and monitoring of national adaptation policies across sectors (horizontal governance dimension) and across levels (vertical governance dimension) are in place in a majority of countries, with horizontal coordination arrangements being more common (evidence for 25 countries) than multi-level coordination set-ups (19 countries). In

recent years, some countries (six) have initiated a regulatory approach towards institutionalising coordination of adaptation by means of legally mandated bodies, mostly anchored in the national climate laws or ordinance pursuant to climate laws (e.g. Switzerland), except for the Netherlands, where the roles of the Delta Commissioner and a political steering group in developing and implementing the Delta Programme are determined under the separate Delta Law. However, the countries that have climate laws or other legislation to mandate dedicated bodies with coordination responsibilities still represent a minority. Available data also suggest that countries tend to assign both horizontal and vertical coordination tasks to the same type of institutions. At least six countries (Albania, Greece, Kosovo, Netherlands, Portugal, Switzerland) legally mandate permanent high-level horizontal coordination bodies. In some countries, the mandates of these bodies also include significant aspects of multi-level governance. Examples include the Inter-ministerial Working Group on Climate Change (IMWGCC) in Albania, the National Climate Change Adaptation Committee (NCAAC) in Greece, and the National Council for Climate Change in Kosovo. Provisions in the legal acts usually stipulate the responsibilities, composition, and basic operating procedures of these coordination bodies.

In some countries (e.g., Albania, Kosovo, Portugal), the competences of these coordination bodies cover both mitigation and adaptation. Apart from steering and supervising the integration of adaptation into sectoral policies and plans and/or the implementation across levels, the adaptation-related mandates of such inter-ministerial or inter-departmental working groups in some cases also relate to monitoring and evaluation (e.g., Portugal), networking and knowledge transfer (e.g. Switzerland), or capacity-building (e.g., Kosovo). These coordination bodies are often structurally embedded in, and chaired by, the governmental authorities (Ministries) with political ownership for national adaptation policies, such as the Ministry of Climate Crisis and Civil Protection in Greece and the Federal Office for the Environment (FOEN) in Switzerland. In Portugal, the climate law assigns coordination responsibilities to two different bodies: the Climate Action Commission (CAC) at the political level, and the NAS (ENAAC) coordination group at the technical level. In some cases, pre-existing, more informal coordination structures continue to operate and co-exist alongside new institutionalised coordination bodies established under climate laws. For example, in Switzerland the Interdepartmental Committee on Climate (IDA Climate) for horizontal coordination at political level shall be maintained but will become part of a new network ('platform') of federal actors for horizontal and vertical coordination.

Advisory bodies and other relevant actors

While more or less formal bodies advising adaptation policy-making are a widely used instrument among EEA member and cooperation countries, in ten countries (Albania, Finland, Greece, Iceland, Ireland, Kosovo, Malta, Netherlands, Portugal, Serbia) independent institutional advisory bodies for adaptation have been anchored in national legislation, mostly in climate laws. In most cases, the mission of these bodies – often councils, boards or panels - covers both mitigation and adaptation dimensions of climate policies. As regards climate adaptation, the mandates and roles of these bodies are not always made clear and differ between countries, with policy advice on adaptation-related strategic directions, policy decisions, and law-making tending to be more common than purely scientific advisory roles related to analysis of the knowledge base (e.g., climate risks, adaptation needs, knowledge gaps). The Climate Panel in Finland, the Scientific Committee on Climate Change in Greece, and a scientific advisory board to the Dutch Delta Program represent examples of more science-oriented roles. In comparison, examples of more policy-oriented advisory bodies include the Climate Council in Iceland, the Climate Action Council in Portugal, the Climate Action Board in Malta, and the Climate Change Advisory Council in Ireland, whose duties include an annual scorecard exercise on implementation of the NAS. In some countries (e.g., Albania, Serbia), there seems to be a blurred distinction between roles in external policy advice and policy coordination. Depending on the country, institutional advisory bodies report and provide their expertise to the Government, responsible Ministries, the Parliament, the Delta Commissioner (Netherlands), or political national coordination bodies. Apart from academia and scientific institutions, governmental

authorities, civil society, businesses, and local authorities are regularly represented in these consultative bodies.

Nine countries (Albania, Croatia, Germany, Greece, Iceland, Kosovo, Portugal, Slovenia, Switzerland) have adopted legal provisions assigning other specific roles to additional actors in adaptation processes. Examples include the Croatian Climate law, which states a cooperation requirement for state administration bodies and public authorities, and the Swiss climate protection law, which mandates actors of the finance sector to contribute to climate-resilient development and to regularly review climate-rated financial risks. In Portugal, regional coordination and development commissions are assigned responsibility for preparing regional climate action plans, and the Slovenian spatial planning law requires regional spatial planning entities to include climate change impact assessments in their plans and to pursue adaptation as an objective of spatial planning.

Examples of obligations for subnational adaptation planning

Multi-level governance in adaptation allows policies to be tailored to local vulnerabilities and encourages collaboration and more efficient resource allocation. As all levels of government, administration and territorial organisation are affected by climate change, coordinated planning and implementation of adaptation actions is essential. Such coordination makes climate adaptation a distinctive multi-level governance task, where the national level has a central role in providing a vertical governance framework for enabling, supporting, steering and enforcing adaptation processes across different levels. In line with a trend towards adoption of national climate laws addressing adaptation, a growing number of countries are complementing public funding and 'soft', non-monetary support measures for sub-national levels with legal obligations for regional and local authorities to set up adaptation plans. Such top-down coercive approaches can be an important driver of vertical policy implementation and have potential to strengthen coherent and effective adaptation policy-making and empower subnational actors (EEA, 2022; Leitner et al., 2023).

Explicit legal requirements for sub-national adaptation planning have been identified in 11 countries (Albania, Croatia, Denmark, Germany, Greece, Ireland, Kosovo, Netherlands, Portugal, Serbia, Sweden). Often, but not always, these requirements are coupled with obligations for monitoring and reporting to the national level. Available information allows to roughly distinguish three groups of countries, with information for a few countries being too unclear to allow mentioning them here: i) three countries (Albania, Denmark, Ireland) focus their legal mandates on local authorities (e.g., requirement for Local Authority Climate Action Plans in Ireland), whereas ii) in Greece (Regional Adaptation Action Plans) and Sweden (county administrations) only regional authorities, and in the Netherlands working regions for adaptation are addressed; iii) in a minimum of another three countries (Croatia, Germany, Portugal), legal provisions cover adaptation strategies or integrated climate action plans at both municipal and regional levels. The recent German Federal Adaptation Act obliges the state governments [Länder] to develop, implement and update in five-year-intervals state-level adaptation strategies. In addition, the districts and/or municipalities need to set up climate adaptation concepts with catalogues of measures, whereby it is up to the state governments to decide whether all municipalities need to have a concept or if a regional concept at district-level is sufficient (see Box A 1).

Examples of obligations for mainstreaming of adaptation into sector policies

Mainstreaming, i.e. the horizontal integration of adaptation goals and actions into sector policies and their instruments, is a key mechanism for implementing adaptation. A main goal is to achieve coherence of public policies, i.e. the alignment and harmonisation of different sectoral policies with climate adaptation goals to minimise conflicts, avoid trade-offs, and foster mutual synergies towards achieving common overarching adaptation outcomes (EEA et al., 2016). An increasing number of countries is trying to enforce horizontal policy integration by means of regulatory approaches. Legal obligations for mainstreaming of adaptation into all or some sector policies are in effect in 16 countries (Albania, Bulgaria, Croatia, Denmark, France, Germany, Greece, Ireland, Kosovo, Portugal, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland), often enacted in national climate laws or supported by specific sector-related legislation,

other than transposed EU Directives. In four of these countries (Ireland, Portugal, Spain, Sweden), regulatory mainstreaming is pursued through legal mandates for setting up dedicated SAPs. While not fully conforming to the SAP model, the Dutch Delta Program, which is mandated by the Delta Law and focuses on water-related adaptation issues, might justify adding the Netherlands to this list of countries. Another group of countries (Albania, Croatia, Germany, Greece, Kosovo, Serbia) apply a general mainstreaming and cooperation requirement for incorporating adaptation concerns into relevant cross-cutting or sectoral policy documents (e.g. of line ministries), often by specifying the affected sectors and fields of responsibility (e.g. energy, construction, water management), and/or for climate-proofing development projects. A group of countries (e.g. Denmark, France, Slovakia, Slovenia) has integrated requirements for consideration of adaptation into their laws on spatial planning or territorial development. For example, the revised spatial planning law in Slovenia defines contributions to adaptation as an objective of spatial planning and requires regional spatial plans to include climate change impact assessments. Examples of additional specific approaches to regulatory mainstreaming have been identified in the legislation of the following two countries: i) the German federal adaptation law obliges legal entities under public law at national level to set up and implement adaptation concepts, which is interpreted as addressing providers and operators of public infrastructure and services, such as the Federal German Railways; and ii) in Switzerland, the revised CO_2 act mandates the Swiss Financial Market Supervisory Authority (FINMA) and the Swiss National Bank (SNB) to regularly review climate-related financial risks and to publish regular reports, and the recent climate mitigation act aims at aligning financial flows towards climate-resilient and low-carbon development and addresses respective contributions of Swiss finance actors.

5. Monitoring, evaluation and learning

Key Messages

- Monitoring, evaluation and learning (MEL) is used to track adaptation progress, identify challenges, and feed into revision of adaptation policies.
- Despite MEL's expanding role, effectively connecting MEL systems across national, regional and local levels remains challenging, and many countries are still working to formalise how MEL insights can directly shape policy development.
- MEL in legal acts is somewhat prevalent. Fourteen out of 18 countries with national climate laws legally require at least one aspect of MEL. In many countries with adopted national climate laws progress assessments and evaluation are conducted on a regular basis and the actors responsible for data collection and coordination are formally appointed.

Monitoring, evaluation, and learning (MEL) serve as essential components in developing and implementing effective adaptation policies, enabling countries to track progress, assess the effectiveness of actions and incorporate new insights into ongoing and future adaptation policy cycles. Publishing national progress reports and evaluations on a regular basis highlights that MEL activities are now more widely performed across the EEA member and cooperating countries, and that countries are progressing the implementation of their planned adaptation actions. MEL systems are used to track the progress of NAS and/or NAP implementation, and increasingly inform policy revision processes. Ensuring that the outcomes of such evaluations are taken up and considered by policy makers when designing new legislation, policies or plans is in many senses as important as the monitoring and evaluation work itself – if learning is not encouraged, there is a risk that valuable information gets unnoticed and becomes not used or underused.

When conducting the assessment, the following approach was applied. First, based on the information reported under the Governance Regulation, and on the outcomes of the desktop research, an effort was made to map how many of the 38 countries have already published at least one progress report or evaluation at national level. The frequency of progress reports and evaluations was also noted. Secondly, legal provisions to monitor adaptation action and conduct reporting were examined. The analysis explored if targets/goals/objectives in legislation are requested to be monitored, and how.

This assessment takes into consideration only MEL, and reports published at the national level. National communications, biannual transparency reports, adaptation communications under the UNFCCC and Paris Agreement, the adaptation reporting under the EU Governance Regulation and other international reporting activities were excluded from the assessment.

5.1. Progress reports, evaluation and indicators as building blocks of MEL

Seventeen countries published progress and/or evaluation reports, and seven countries are planning to start the activity in the near future. When it comes to progress and evaluation, 17 out of the 38 countries are publishing progress and/or evaluation reports either on a regular or on ad-hoc basis (Albania, Austria, Belgium, Cyprus, Czechia, Estonia, Finland, France, Germany, Ireland, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland). According to the assessed documents, additional seven countries (Bulgaria, Greece, Hungary, Italy, Latvia, Poland, Türkiye) indicate the plan to publish such reports in the near future.

The frequency of progress assessments and evaluations performed is influenced by the national policy cycles and greatly varies across countries. Eight countries (Cyprus, Finland, Ireland, Netherlands, Norway, Portugal, Spain, Sweden) publish annual or biannual progress reports, four follow a predefined and regular cycle (Germany, Spain, Sweden, Switzerland) and seven countries assess progress in irregular intervals (Austria, Belgium, Czechia, Estonia, France, Netherlands, Slovakia). It is important to highlight that some countries prepare both reports on progress and periodic evaluation reports (e.g. Belgium, Finland, France, Germany, Netherlands, Spain, Sweden). In some countries the terminology can be used interchangeably,

or progress and evaluation reports are merged into one document, which makes further assessment challenging.

The coordinators of the reports are usually Ministries or environmental agencies, and the outcomes are communicated to the government, to the parliament and are made publicly available.

When it comes to the format, these reports typically include the following components: a brief overview of the national adaptation policy (strategy or plan) and an assessment of its implementation, a summary of the current state of the implementation of adaptation actions outlined in the policy. The reports are often complemented with process indicators, identification of challenges and gaps in adaptation efforts and recommendations for the future direction of the policy or advocacy for specific adaptation actions.

5.2. Legal provisions for monitoring adaptation policy, conducting reporting and performing evaluation

This section provides details on the legal provisions related to at least one of the components of the 'MEL system'. How MEL is defined by legislation varies, some legislative acts outline complex and stand-alone provisions for the monitoring, reporting (or progress report) and evaluation component. Other legislative acts touch upon only one or some of the MEL components refer further to NAS or NAP, as vehicles where MEL requirements are further specified, or have no provisions on MEL. The existence of legal provisions does not, however, necessarily mean that these systems are fully operational as some of the national climate laws are quite recent. Also, several countries are still in the process of developing their MEL systems and need more time to operationalise them.

Monitoring, reporting and evaluation in legal acts is somewhat prevalent. Fourteen out of 18 countries with national climate laws legally require at least one component of MEL (Albania, Croatia, Finland, Germany, Greece, Ireland, Kosovo, Malta, Montenegro, Norway, Portugal, Serbia, Spain, Switzerland). In addition to climate laws, other legislative documents also contain provisions related to MEL, which are not covered in this assessment.

Requirements to monitor adaptation policy and its goals defined in climate laws

Several countries (e.g., Finland, Germany, Portugal, Spain) use indicators to track adaptation progress and implementation by using process indicators. Fewer countries monitor climate impacts and risks using indicators. While there has been much discussion about the need for moving from monitoring impacts to monitoring outcomes, in practice this discussion has not resulted in concrete action. The climate laws do not explicitly define indicators for adaptation, but can set requirements to use indicators.

Crafting new indicators for monitoring adaptation can be both costly and time-consuming. It is therefore cost-efficient to the extent possible to make use of relevant indicators in other sectors that already exist and are updated regularly. Some countries (Albania, Kosovo, Portugal, Serbia, Spain) use, for example, Sustainable Development Goals and Disaster Risk Reduction indicators to track adaptation.

Opportunities to utilise existing indicators in different sectors to track adaptation, and for adaptation indicators to be used by other sectors, should be further explored by countries. When reaching out to individual sectors in order to progress with monitoring efforts in their own fields, it is also important to adopt a realistic view of what can be achieved and to stress the mutual benefits that the work will generate.

A few countries (e.g. Finland, Germany) have been identified to use other additional qualitative tools, besides quantitative indicators, to monitor adaptation. For example, Germany conducted several series of interviews with different target groups. Finland has made use of a national monitoring group to receive input from different policy sectors, levels of governance and societal stakeholders on the implementation of the NAP. Combining indicators with other tools, such as questionnaires, focus groups and workshops provides not only additional information, but also potentially provides avenues for engaging with and providing information to stakeholders about the state of adaptation progress.

Requirements for conducting reporting and preparing progress reports defined in climate laws

When it comes to requirements in legislative acts for conducting reporting and preparing progress reports, most of the countries (Albania, Croatia, Finland, Germany, Greece, Ireland, Kosovo, Malta, Montenegro, Norway, Serbia, Spain, Switzerland) in their national climate laws require some form of national reporting activity. While there are commonalities in the structure and intent of reporting obligations across countries, there are also notable differences in the specifics of reporting entities, levels of detail, development status of reporting systems, and the frequency of reports. Furthermore, in some cases the requirement of the legislation is to outline and incorporate reporting obligations directly in a NAS, NAP or other policy documents, like SAP. Reporting is focused on progress, and the results of reporting activities are often captured in progress reports. Reporting requirements typically focus on the progress towards implementation of adaptation actions defined in the NAS, NAP or other policies, the adequacy and effectiveness of these actions, and sometimes specific data on climate impacts and expenditures is included. The scope and detail of what needs to be reported can differ significantly as described in the legislative acts. In some cases, such as in Ireland, a comprehensive reporting structure involving various reviews, and annual and periodic reports are detailed in the legislative act. In other cases, the act only states in general terms that progress towards implementation of adaptation actions must be reported. Often, the NASs and NAPs contain specific reporting requirements and the timeframes for collecting information.

The body responsible for conducting reporting or publishing a progress report is often defined by the national climate laws. Reporting can be mandated to national bodies, such as ministries or environmental agencies. The exact bodies or agencies to which reports are submitted vary by country.

The progress towards implementation of adaptation actions can be presented in a progress report and must be reported to the relevant ministry, or the competent ministry reports to the Government. Often, the Government has to report to the Parliament.

The frequency of reporting is often set allowing both assessing progress on a regular basis and feeding information into European and international reporting. Reporting is often required on a regular, structured basis, with common intervals being annual, biennial, or every few years. However, reporting frequency is not always specified in the legislative act.

Examples of legislative provisions establishing reporting for sectoral or sub-national authorities

Regarding legislative provisions for sectoral authorities and/or subnational authorities, **six** countries (Albania, Croatia, Ireland, Kosovo, Portugal, Serbia) have established obligations for both sectoral and subnational levels. Standalone reporting obligations for sectoral level exist in Montenegro and Ireland. Reporting requirements at subnational levels vary, with some countries mandating detailed reporting at regional or local levels. Standalone reporting obligations for subnational level exist in Germany and Switzerland. For example, in Germany, federal states must report on implementation of adaptation strategies and set up district and municipal climate adaptation concepts. In Kosovo, national and local government institutions must submit data through the National Information System on Climate Change. In Switzerland, cantons must report on their adaptation actions to the national coordinating body. In the remaining cases the reporting obligations are general for example (Norway, where an annual report is submitted to the parliament).

5.3. Integrating monitoring and reporting into adaptation policy development

The discussion on monitoring, reporting and evaluation (MRE) has begun to pay increasing interest in the notion of learning. More often, this is referred to as monitoring, evaluation and learning (MEL). Learning can be seen to be both a process and an outcome. Learning involves both gathering and sharing new knowledge about, for example, the progress of planned adaptation actions (process), but importantly also having an impact on behaviour or decision-making (outcome) (Njuguna et al., 2024). Given the potential of monitoring and evaluation to inform adaptation planning and implementation and the resources tied

to these activities, the focus on the outcomes of learning is important, as it places emphasis on the generative effect of monitoring and evaluation and can support developing more effective adaptation.

Due to long timeframes and the context-specificity of concrete adaptation actions it is paramount to learn from one's own previous practice in addition to learning from best practices from other contexts. A monitoring system that is built on learning generates opportunities for analysing and reflecting on monitoring data with different stakeholder groups (Noltze et al., 2021). Learning can stem from a variety of different inputs, such as progress, monitoring reports, evaluations and indicators. In addition to limited resources, based on the assessed data, a challenge for developing learning further is the lack of indicators that are more easily communicated and potentially taken on in adaptation planning. When indicators are lacking or not utilized, it is more difficult to transfer key points across individual experts and sectors, thus hindering learning. At the very minimum, learning in MRE entails identifying in which ways MRE data can be fed into the adaptation policy development as part of the adaptation policy cycle.

During the desktop assessment 17 countries have been identified to include at least a degree of learning in their MRE activities and thus moving towards MEL. Many of these countries have used MRE data to revise and improve NAPs, NASs, SAPs and RAPs. Germany produces regular NAS monitoring and evaluation reports that are designed to feed into further adaptation policy development, i.e., the NAS and the NAPs. For example, the second NAS progress report recommended giving adaptation policymaking a binding legal framework and to reorganize future policy processes, resulting in the Federal Climate Adaptation Act in 2023. Albania highlights explicitly in their NAP that learning is a key principle of the monitoring process involving incorporation of new knowledge and lessons learned to adjust processes accordingly.

Box A 4 Enhanced transparency: Examples of legislative requirements for MEL

In Albania the aim is to monitor through an M&E system the progress in the implementation of policies, adaptation plans, adaptation interventions and investments and/or how these interventions are reducing vulnerability, improving adaptive capacity and supporting the overall well-being of the population affected by the impacts of climate change.

In Finland the government shall monitor the implementation of the climate policy plans, and whether the climate change adaptation objectives set in the plans are achieved. Each calendar year, the government submits an annual climate report to the Parliament. The annual climate report shall include: an assessment of the adequacy and effectiveness of the adaptation measures included in the adaptation plan and, if necessary, a report on the implementation of the planned adaptation measures by administrative region. Based on the monitoring, the Government can decide on the additional measures needed to achieve the objectives. The Government must inform the public of the results of the monitoring.

In the German Federal Climate Adaptation Act a separate section is dedicated to monitoring. The Federal Government produces a monitoring report in accordance with the scientific state-of-the-art with which it informs the public on the observed impacts of climate change in Germany and on the status with respect to the achievement of targets. The monitoring report is to be produced and published at least every four years, ensuring on each occasion a reasonable period before the planned presentation of the precautionary climate adaptation strategy. The monitoring forms the scientific basis for the evaluation of progress in achieving the targets. On the basis of the monitoring, the targets are also reviewed and, where appropriate, updated in the course of updating the climate adaptation strategy. If, on the basis of the monitoring or other findings, a failure to achieve a target is likely, the competent ministry may adopt appropriate measures for improvement even before the climate adaptation strategy is updated.

In Greece the National Observatory for Adaptation to Climate Change contributes to monitoring and evaluating the country's resilience to the effects of climate change, the monitoring of climate change adaptation actions and policies, through a system of indicators and other appropriate methods and tools. An annual progress report is to be prepared on climate change mitigation and adaptation issues, which includes: description of actions and progress in relation to adaptation to climate change by sector. It is also required to conduct monitoring of the regional adaptation action plans.

In Ireland an annual report is prepared on the following matters: progress under the most recent approved climate action plan, including the policies, mitigation measures and adaptation measures that have been adopted; and the implementation of adaptation policy measures under the most recent approved national adaptation framework. A similar approach is applied to the sectoral adaptation policies; the implementation of adaptation policy measures and any adaptation policy measures envisaged, where a sectoral adaptation plan has been prepared.

6. Discussion: Learning from the European perspective

As the impacts of climate change intensify, Europe is strengthening its policy frameworks to adapt to increasing risks and vulnerabilities. Based on the assessed documents in this report the following learnings can be drawn on adaptation policies in EEA member and cooperating countries: The adaptation policy landscape reflects progress, with broader geographic reach and enhanced legal mandates driving more coordinated and systematic adaptation actions. National climate risk assessments are becoming central to adaptation planning, and the incorporation of legal provisions signals a commitment to evidence-based and iterative policy-making. Yet, challenges remain, particularly in integrating monitoring, evaluation and learning systems to ensure adaptation actions lead to meaningful risk reduction and increased resilience.

6.1. Strategies and plans to operationalise adaptation

Robust adaptation policies are essential for enhancing resilience and reducing vulnerability to climate change. Across the 38 EEA member and cooperating countries the adaptation policy landscape, including national and sectoral adaptation strategies and plans as well as national climate laws, showcases a strong commitment to addressing climate risks and enhancing resilience.

Most countries have implemented national adaptation strategies (NASs), which serve as overarching frameworks outlining long-term visions and coordination mechanisms for climate change adaptation. Usually, these strategies are operationalised through national adaptation plans (NAPs), which translate the high-level goals into actionable adaptation measures with defined objectives, timeframes and resources. However, there are some differences in how countries approach these frameworks. For example, while some countries maintain standalone NASs, others integrate them with NAPs or use different terminology to describe them.

SAPs remain less common, though their adoption is growing, and their inclusion in some national climate laws indicates a shift towards more sector-specific adaptation planning, aligning with the governance structures. These plans are often led by the ministries responsible for their respective sectors (risk-owner), ensuring that adaptation actions are contextually relevant and actionable. As SAPs become more common along with NAPs, they are likely going to play a key role in mainstreaming and connecting overarching national adaptation strategies in a systemic way with on-the-ground adaptation actions. This integration may help address sector-specific risks more effectively while supporting a focused approach to building climate resilience in key sectors.

6.2. A trend towards binding requirements

Effective climate adaptation benefits from robust legal provisions and a supportive governance framework to ensure the enforceability of planning and implementing adaptation efforts. A growing share of EEA member and cooperating countries is seeking to strengthen the planning and implementation of adaptation policies through enforceable legal requirements, demonstrating that regulatory approaches to adaptation policy-making are progressing in Europe. Almost two thirds of all countries have enacted legal provisions to mandate adaptation policy-making and to institutionalize significant elements of adaptation governance systems. In the countries with national climate laws, these are also the main source of regulations governing adaptation policy processes, with further countries using other, sometimes sector-related legislative acts. While the scope and depth of detail vary between countries, significant aspects or elements of adaptation policies and governance systems regulated by legal provisions regularly comprise: mandates and revision cycles for (sub)national adaptation policies, obligations for climate risk assessments (CRAs), political competencies, establishment of coordination bodies and advisory bodies, reporting obligations, and obligations for adaptation planning by sectoral and sub-national authorities. By complementing voluntary, collaboration-based governance, financial incentives, and 'soft', non-monetary support actions for subnational and sectoral actors, top-down coercive requirements can be a key driver for more effective, coherent, and accelerated action on adaptation, thus facilitating the closing of common

implementation gaps. In turn, a stronger regulatory framework for adaptation has potential to benefit the enfolding of more informal collaborative forms and modes of governance.

National climate laws partly include objectives of adaptation, but no country defines measurable goals for adaptation within the legislation. This mirrors the situation at the European level. The European climate law (EU, 2021) provides a framework for achieving progress in pursuit of the global goal on adaptation - to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change (defined in Article 7 of the Paris Agreement) - without identifying any measurable goals. These goals are neither set in the second EU Adaptation Strategy but perhaps may be introduced in a future EU wide adaptation plan or revision of the European climate law as a means of providing some goals against which to access progress and ultimately feed into the monitoring, evaluation and learning (MEL) process. At the national level, however, these goals are sometimes referred to in NASs, more on a "meta-level" in such that climate risks are reduced, climate resilience or adaptive capacity increased, but even more so in NAPs making the adaptation policy operational and using these goals to measure against with relevant indicators or criteria in the MEL system. When looking at the adaptation policy cycle, clearer goals on the level of e.g. sectors and adaptation action have the potential to improve the tracking as well as measuring the effectiveness of adaptation actions towards reducing climate risks and increasing climate resilience.

However, legal requirements alone are not a sufficient precondition for effective implementation of adaptation policies but need to go hand in hand with a supportive, enabling governance framework and support measures provided by higher-ranking levels. Inversely, absence of legal provisions does not exclude the fact that respective practices may nevertheless be established in a country. As legal provisions are often of rather recent origin, implementation in practice may not have started yet (as of July 2024).

Being a cross-sectoral, multi-level and multi-issue policy field, effective and coherent policy-making on climate adaptation depends on adequate governance mechanisms that enable coordination, cooperation, and information exchange to integrate adaptation into relevant sector policies and mainstream it across multiple administrative levels. This requires appropriate institutional set-ups, mechanisms and arrangements, in particular dedicated actors or working bodies tasked with coordination responsibilities (EEA, 2014, 2020; Leitner et al., 2023; EEA et al., 2020). While mechanisms for horizontal and vertical policy integration are in place in most countries, with horizontal coordination arrangements being more common than vertical coordination set-ups, a small, but increasing number of countries has established legally mandated coordination bodies at national level. Institutionalizing coordination bodies and specifying their roles, based on a clear legal mandate, increases the political relevance of adaptation, strengthens the legitimacy of adaptation coordinators, and can crucially foster horizontal and vertical policy integration (Leitner et al., 2023; EEA, 2022). To enable such coordination bodies to fulfil their important roles, formal mandates should be combined with allocation of adequate resources (financial and staff) to strengthen their actual coordination capacities.

Vertical diffusion of adaptation policies at and across multiple levels, as well as mainstreaming, i.e. the horizontal integration of adaptation goals and actions into sector policies and their instruments, are key mechanisms for successful implementation of adaptation. An increasing number of countries are pursuing enforcement of vertical and horizontal policy integration by means of legal requirements for subnational adaptation planning and for mainstreaming. Such coercive approaches can be in favour of coordinated adaptation policies, drive adaptation action at local and regional levels, and increase coherence of public policies by minimizing conflicts and fostering synergies, thus leveraging agency for collective adaptation concerns based on governmental authority.

6.3. Basing adaptation policy on analyses, assessments, indicators and scientific evidence

A regularly updated understanding of climate science, risks and progress on adaptation is key for guiding effective, evidence-based adaptation policies and preventing maladaptive responses. In Europe, where the European climate law requires that national adaptation strategies and plans are "based on robust

climate change and vulnerability analyses, progress assessments and indicators, and guided by the best available and most recent scientific evidence", the state of climate risk assessments and shift towards MEL reveals both progress and gaps.

Comprehensive CRAs that address multiple climate change impacts across sectors and regions are essential for informing preventive, effective, and evidence-based national adaptation policies. Robust knowledge about climate risks is needed for a country-wide, systemic understanding of current and future climate risks, for identifying the main concerns requiring adaptation responses, to focus adaptation actions on key climate risks with urgent need for action and to avoid risks of maladaptation, which may occur when responses are driven only by short-term reactions to extreme events. More than half of the EEA member and cooperating countries have strengthened anticipatory adaptation planning by completing structured assessments of climate impacts, vulnerabilities and risks that are considered as national CRAs in the present report. Although some form of partial climate risk information is available at national level in almost all countries, this also implies that nearly one-half of the countries is lacking a comprehensive, overarching knowledge base for guiding coordinated national policy-making on adaptation. Limited sectoral, thematic or region-specific assessments that focus on single issues or parts of a country have limitations to inform broad and systemic national adaptation policies and risk remaining in isolated 'policy silos'.

The minimum requirements for 'comprehensive national CRAs' used in this report are impartial to specific assessment concepts and methodologies. Only for a limited number of countries with national CRAs it is verified that their methodological frameworks follow the concept of climate risks as established by the 5th Assessment Report of the IPCC (IPCC, 2014) or apply approaches comparable to the European Climate Risk Assessment (EUCRA) (EEA, 2024), which may be explainable by almost half-of all national CRAs dating back ten years or more. However, EUCRA has initiated discussions at country level about the formats and methodologies for future national CRAs. As the approaches demonstrated by EUCRA may prove to be inspiring for countries, this could bring about advanced new national assessments.

National CRAs that are systematically integrated into the policy cycle and are aligned with revisions of national adaptation policies in terms of timing, frequency and contents, ensure that policy improvements are based on current climate risk information. However, the relationship between the NAPs and CRAs is not always explicitly defined in adaptation policies. Further, while NAPs and SAPs are typically developed to operationalise NASs, it can be inferred that they are likely based on CRAs, even if this connection is not clearly stated in some policy documents.

A third of the countries with national CRAs, have prepared additional, more specialized assessments covering specific sectors, themes, or regions. Countries with SAPs have the highest number of sectoral CRAs, while others require regional/subnational CRAs as mandatory parts of regional adaptation plans or benefit from independent assessment reports by an active domestic research community. Such additional assessments enrich, supplement and deepen the knowledge base and can inform targeted sectoral adaptation efforts, but the issue-specific studies only do not suffice as a substitute for a comprehensive national knowledge base on climate risks.

CRAs are slowly but increasingly mandated by national climate laws or other legislative acts and thus institutionalized. Enforcing the availability of up-to-date climate risk information and periodical renewal of CRAs through legal requirements is in favour of accounting for changes in risk and vulnerability levels and evidence-based policy revision. At least one third of countries have legal obligations to perform CRAs, with most of these countries requiring solely national assessments, while some mandate CRAs at both national and subnational levels. Two main models are observed, namely in the way that some countries enforce explicit dedicated assessments with stand-alone reports, while others implicitly require appraisals

of climate vulnerabilities and risks as an integral part of their policy revisions and adaptation policy documents.

The integration of CRAs with MEL systems remains limited, with only few countries clearly linking the two processes to inform each other. If planned accordingly, both steps of the policy cycle can support each other, when e.g. MEL processes are designed to gather new climate risk information, or when the evaluation of adaptation strategies and plans exposes additional knowledge needs. Strengthening such systematic linkages between CRAs and other steps of the adaptation cycle are clearly in favour of improving both efficiency and effectiveness of adaptation policies.

Monitoring, evaluation and learning play a key role in refining adaptation policies by tracking progress, identifying challenges and informing revisions. Across EEA member and cooperating countries, MEL systems are expanding, but gaps remain in understanding adaptation outcomes and linking MEL processes across governance levels.

Many countries are using MEL as part of their adaptation policy cycles to support revisions of adaptation strategies and plans. Countries use a range of both quantitative and qualitative tools, such as indicators, criteria, surveys and workshops to gather and assess important information on adaptation progress. However, the absence of available outcome indicators presents a challenge for MEL, linking back to the absence of measurable adaptation goals in national adaptation policies. Moving from tracking whether or to what extent a planned measure has been taken toward focusing on the effects of implemented measures using indicators would be welcomed to gain valuable additional insights into the appropriateness and effectiveness of adaptation policy. There have been multiple efforts to develop such indicators, and many countries report the importance of utilizing them as part of their MEL systems. In addition, while MEL is often well-integrated into countries' adaptation policies, connecting it across levels of government – national, regional and local – has proven difficult. Being able to make use of and learn from MEL information from the subnational level would provide excellent opportunities to obtain a fuller and more holistic picture of how adaptation is progressing on multiple levels.

6.4. Limitations of the report

The information presented and discussed in this report was compiled from a range of publicly available sources and includes an assortment of policy documents, climate risk assessments, project reports, national communications, and other grey literature. Some relevant documents may not have been captured and included in the assessment, if they are not publicly available or (easily) accessible online. In many cases, these documents were translated into English, leaving the possibility for misinterpretation of information. Furthermore, interviews were conducted only with representatives from countries with national climate laws, providing greater detail and depth of information in those case, possibly leading to greater coverage of these countries through examples in the report. Additional interviews were conducted in case other type of legislation was discovered during the screening of documents. Also, the report does not capture the latest developments as several EU Member States are currently in the process of updating their adaptation policy frameworks.

In addition, limits occur in terms of clearer or more detailed information about implementation showcasing progress on the level of adaptation actions. The categorisation according to the Key Types of Measures (KTMs), an EEA approach that can be voluntarily used to report adaptation actions under the Energy Union Governance Regulation (Leitner et al., 2021) can be a promising way forward.

7. Conclusions and way forward

The presented ETC CA technical report provides an overview of the current adaptation policy landscape of the EEA member and cooperating countries but does not dive into the details of ongoing policy development processes across Europe. Through desk research on all 38 EEA member and cooperating countries, the 24 country interviews and the Eionet consultation, it became evident that adaptation policy frameworks in many European countries are undergoing significant updates. New climate risk assessments and national adaptation strategies are currently in development, reflecting the importance of periodic revisions. Moreover, more and more countries choose the pathway to introduce legislative provisions for climate adaptation. Discussions are accelerating around defining measurable targets for adaptation and establishing a set of adaptation indicators for measuring progress towards them. These developments are essential to ensure that adaptation policies remain robust, integrate the latest scientific knowledge, and address both present and emerging climate risks. The recent key trends at the international and European levels tend to enrich these processes and influence the future direction for adaptation policy development and implementation.

One of the most significant challenges remains the advancement of monitoring, evaluation, and learning frameworks, particularly measuring the outcomes and effectiveness of adaptation actions. Strengthening MEL systems is essential to support evidence-based policymaking and decision-making. Over the past two years, efforts at the international level under the UAE–Belém work programme (operating under the Paris Agreement) have focused on developing indicators for measuring progress toward the targets established under the UAE Framework for Global Climate Resilience. These efforts have stimulated global discussions and have already facilitated sharing of experiences with measuring progress. The work programme is expected to conclude at COP30 in Belém, marking a pivotal moment for efforts under the Global Goal on Adaptation (GGA).

The international attention is also anticipated to enhance the development and utilization of indicators at both European and national levels. By advancing this work, countries will be better equipped to refine and align their MEL approaches, fostering greater coherence and comparability in tracking adaptation progress across governance levels and across sectors. The European Environment Agency has been consolidating existing knowledge on how to measure various aspects of adaptation at all levels of governance, with an aim to support the on-going work on measuring progress towards climate resilience at the European level. A recently published database available on Climate-ADAPT[10] is the result of a mapping exercise conducted in 2023 identifying numerous frameworks related to adaptation and over 1,000 indicators that were already used to measure aspects of resilience. Additionally, the development of a common set of indicators to measure overall progress towards climate resilience across EEA countries would in the future provide a unified, European approach.

At the European level, several parallel processes are underway to enhance the policy response to climate risks and build resilience.

2025 is a reporting year under the Governance Regulation, and at the same time the regulation itself is being reviewed. The evaluation of the Governance Regulation has concluded and in 2025 the Commission will be focusing on streamlining reporting obligations to reduce administrative complexity, while enhancing the utility of reported data.

The 2025 adaptation reporting cycle is anticipated to provide valuable insights into recent policy developments and the implementation of adaptation actions across EU Member States. As in previous cycles, EEA member countries will be invited to voluntarily report information. Additionally, for the first time, Energy Community contracting parties are expected to report information, further broadening the

[10] https://climate-adapt.eea.europa.eu/en/knowledge/tools/measuring-progress-towards-climate-resilience

scope of information available across Europe. The regular, biannual inflow of data, together with the submissions from 2021 and 2023, and with the 2015 and 2019 submissions under the Monitoring Mechanism Regulation (MMR) provides a unique opportunity to regularly assess progress towards climate resilience, identify ongoing, shared challenges and remaining gaps.

In 2024, the Mission on Adaptation signatories shared information for the first time through the CDP reporting platform, with the next reporting opportunity already scheduled for 2025. At the same time, an increasing number of European regions and cities are voluntarily disclosing information through platforms such as the Covenant of Mayors' MyCovenant and the CDP. These contributions are enriching the data on adaptation policies and actions across Europe, providing a clearer understanding of regional and local efforts. However, significant gaps persist in the overview of subnational adaptation policies, particularly regarding regional planning and local action. Addressing these gaps will require better data collection, improved information sharing, and stronger networking mechanisms to develop a more comprehensive and targeted approach.

The European Climate Law is expected to be amended as well, once the 2040 EU mitigation target is agreed. The amendment is expected to reinforce the role of climate risk assessments, ensuring they are integral to EU adaptation policy, and the adaptation policies of the EU Member States. The new European Commission has also announced the preparation of the first European Climate Adaptation Plan, and the second European Climate Risk Assessment. Both activities are expected to start in 2025. The plan is expected to become an updated framework for addressing climate risks and resilience at the EU level and will build on the experiences from the first and second European adaptation strategy, taking into consideration the first EUCRA outcomes, the evaluation of the first European adaptation strategy and the outcomes of the first progress assessment under the European Climate Law.

When addressing other key issues, one crucial aspect is achieving coherence between global, EU, national, sectoral, and subnational efforts, which is essential to effectively tackling the transboundary nature of climate risks. As adaptation policy frameworks continue to evolve, ensuring alignment across governance levels remains a critical challenge. Strengthening connections between international frameworks, EU-wide initiatives, and national strategies, while integrating sectoral and subnational actions, is vital for creating aligned and effective adaptation actions. Furthermore, focusing on cross-border risks and enhancing cooperation will be key to addressing the broader, transnational dimensions of climate change. Achieving this will require robust collaboration, clear communication, and mechanisms that support the harmonization of policies and actions across all levels of governance.

An overarching challenge in assessing adaptation policies is the lack of clarity in the terminology used, particularly concerning the distinction between ‘adaptation goals’, ‘objectives’, and ‘targets’. The differences between these terms are often not clearly defined. Based on this year’s work, we observed the following distinctions: adaptation goals are typically overarching and highly strategic, such as the Global Goal on Adaptation in the Paris Agreement. Adaptation objectives, on the other hand, are more strategic and generic, often defined in adaptation strategies around themes like addressing risks, reducing vulnerabilities, and enhancing adaptive capacities or resilience. Currently, the discussion is shifting towards establishing measurable targets for adaptation, with a few countries already beginning the process of defining them.

Moreover, the terms ‘adaptation measures’ and ‘adaptation actions’ remain vaguely defined, leading to further ambiguity. The screening conducted this year has also revealed that countries often apply the terms "strategy" and "plan" interchangeably or combine the two approaches into what are referred to as NASAPs (National Adaptation Strategy and Action Plans). To define what a comprehensive national climate risk assessment is, proved to be challenging. While the content of these policies is what truly matters,

inconsistent labelling creates confusion and can hinder the effective implementation, mutual understanding and measuring progress.

Another crucial aspect is the need for adaptation knowledge sharing and capacity building. Investing in training programs can help countries develop the necessary skills and knowledge to develop and implement effective adaptation strategies. In this regard, the European Commission and the EEA could play a significant role in facilitating transnational learning and fostering collaboration between countries.

List of abbreviations

Abbreviation	Name	Reference
CL	Climate Law	
COP	Conference of the Parties	
CRA	Climate Risk Assessment	
EEA	European Environment Agency	www.eea.europa.eu
EIONET	European Information and Observation Network	https://www.eionet.europa.eu/
ETC CA	European Topic Centre on Climate Change Adaptation and LULUCF	www.eionet.europa.eu/etcs/etc-ca
EU	European Union	https://european-union.europa.eu/
EUCRA	European Climate Risk Assessment	www.eea.europa.eu/publications/european-climate-risk-assessment
GGA	Global Goal on Adaptation	
IPCC	Intergovernmental Panel on Climate Change	https://www.ipcc.ch/
MEL	Monitoring, Evaluation, Learning	
MRE	Monitoring, Reporting, Evaluation	
NAP	National Adaptation Plan	
NAS	National Adaptation Strategy	
NC	National Communication	
NCL	National Climate Law	
NDC	Nationally Determined Contributions	
RAP	Regional Adaptation Plan	
SAP	Sectoral Adaptation Plan	
UAE Framework for Global Climate Resilience	United Arab Emirates Framework for Global Climate Resilience	www.unfoundation.org/what-we-do/issues/climate-and-energy/uae-framework-for-global-climate-resilience/
UNFCCC	United Nations Framework Convention on Climate Change	www.unfccc.int

Glossary

Adaptation goals are set to measure in quantitative and qualitative ways with a view to reducing the increasing adverse impacts, risks and vulnerabilities associated with climate change, as well as to enhance adaptation action and support (UNFCCC, 2023).

Adaptation policies are '[the] actions taken by governments including legislation, regulations and incentives to mandate or facilitate changes in socioeconomic systems aimed at reducing vulnerability to climate change, including climate variability and extremes' (Burton et al., 2002).

Climate risk assessment (CRA) refers to evidence-gathering activities that seek to assess climate change impacts, vulnerability and/or risks. They have evolved over the years and so has their use in adaptation policy development. While the importance of CRAs as information sources for developing adaptation policy is generally recognised, the exact nature of and reason for a CRA can vary greatly from country to country (EEA, 2018, p.41).

Evaluation of adaptation policies and their implementation benefits from the use of mixed methods, whereby quantitative and qualitative information and evidence from multiple sources, such as indicator data and stakeholder views, are combined. It is a specific and separate effort to focus on getting deeper insights into some elements and to progress from these insights, feeding back into adaptation policy revision (EEA, 2020).

Horizontal coordination mechanisms refer to institutions and processes that help integrate adaptation into sector policies. It requires those responsible for different policy areas within an administrative level (e.g. national) to exchange information and adjust their activities to ensure that adaptation efforts result in coherent action. This action should respond to the unavoidable impacts of climate change and, where possible, to benefit from climate change (EEA, 2014).

Implementation is defined as putting 'a public adaptation policy into effect' — converting adaptation options into action. Once policymakers decide on, formulate and adopt an adaptation policy, it is implemented i.e. activities identified in the policy document are translated into concrete actions. The Intergovernmental Panel on Climate Change (IPCC, 2014, Chapter 15) identified the important role of monitoring and evaluation in informing implementation: 'implementing adaptation is a dynamic iterative learning process, and monitoring and evaluation help to adjust policy responses and actions to accommodate, for example, the availability of new information such as changes in climate and socio-economic conditions.'

Mainstreaming climate change adaptation into other policies can make efforts to reduce climate change impacts more effective. Its critical aspect is to develop sufficient awareness among decision-makers at all levels to minimise climate change impacts. Therefore, information on potential impacts needs to be available, so that decision-makers are aware of them and a wide range of stakeholders is involved in designing policy instruments. Mainstreaming generally means ensuring that a particular issue is constantly taken into account, reflected in and integrated into broader decision-making processes and activities, essentially with the result that this issue becomes broadly accepted and is viewed as a normal aspect impacting processes and activities (Climate Policy Info Hub, 2020).

Monitoring aims to map climate change impacts and adaptation efforts across stakeholders, using criteria or indicators to show changes over time. Monitoring is usually undertaken on an ongoing basis, while reporting and evaluation activities are typically conducted at only specific, usually strategic, points in time.

A **national adaptation plan** (NAP) is a national document that articulates how a country's national adaptation strategy is to be implemented (and by whom). In most cases, the NAP outlines a strategic planning process for implementing adaptation. It presents adaptation measures in varying levels of detail,

e.g. provides information on the goal of the measures and the next steps needed, assigns responsibilities to those involved and outlines the time frame and deadlines (EEA, 2014).

A **national adaptation strategy** (NAS) is a national document that articulates a country's strategic vision of adaptation to prepare the country for current and expected impacts of climate change. A NAS mostly summarises climate-related risks and vulnerabilities as well as identifying various stakeholders and sectors as areas of action. These strategies facilitate the process of coordinating the adaptation response at the horizontal and vertical levels as well as helping to raise awareness of adaptation among various stakeholders. A NAS usually provides the framework for adaptation in which other governance approaches emerge. NASs are mainly designed by national governments and informed by the scientific community (EEA, 2014, 2018).

National climate laws are legal instruments passed by legislatures that enshrine a binding long-term objective for climate action and, at least to some degree, the necessary processes, institutional responsibilities, and other mechanisms to achieve it (Evans et al., 2023).

Vertical coordination mechanisms refer to institutions and processes in place to support integration of adaptation through multiple administrative levels within a country (i.e. national, provincial, regional and local/city level). This requires that information on and approaches to adaptation are transferred and exchanged effectively within each policy area from the national to the subnational levels and vice versa (EEA, 2014).

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Annex 1 Adaptation policy screening guidelines for desk research

Impact, vulnerability and risk assessment

Question	Type of answer/answer options
1. Does the country have a completed and comprehensive national Climate Risk Assessment (CRA)?	*Single select:* YES/NO/UNCLEAR *If yes, complete 1a-f; if no skip to 1g, or unclear skip to question 2*
a. What is the year?	*Text description - YYYY*
b. What are the title and link?	*Text description*
c. What is the foreseen revision cycle / timeline?	*Text description*
d. Is it aligned with development/revision of national adaptation policies?	*Multi select:* NAS/NAP/SAP/OTHER
e. Is it coupled with the Monitoring, Evaluation and Learning (MEL) system for adaptation?	*Single select:* YES/NO/UNCLEAR
f. What is the geographic scale/level?	*Multi select:* National/Regional/Local
g. Are there other specific/partial assessments addressing climate change impacts, vulnerabilities and risks?	*Multi select: Comprehensive, single sector, single theme, vulnerability aspects, other*
2. Are there legal requirements for CRAs in place in your country?	*Single select:* YES/NO/UNCLEAR *If yes, complete 2a-e; if no or unclear, skip to question 3*
a. Are revision cycles defined by legislation?	*Single select:* YES/NO/UNCLEAR
b. Is the alignment (e.g. time-wise, content-wise) of CRA with policy making (e.g. revision of NAS/NAP/SAP) defined by legislation?	*Multi select:* NAS/NAP/SAP/OTHER/NO/UNCLEAR
c. Are institutional responsibilities for CRAs defined by legislation?	*Single select:* YES/NO/UNCLEAR
d. Is the involvement of advisory bodies or stakeholders defined by legislation?	*Single select:* YES/NO/UNCLEAR
e. Are there legal obligations for subnational CRAs?	*Single select:* YES/NO/UNCLEAR

Planning and Implementation

3. Does the country have an adopted NAS in place?	*Single select:* YES/NO/UNCLEAR *If yes, complete 3a-j; if no or unclear, skip to question 4*
a. What is(are) the adoption date(s)?	*Text description – year (YYYY)*
b. What is(are) the title and link(s)?	*Text description*
c. Who is responsible for development of the NAS?	*Text description*

d. Who is responsible for implementation of the NAS?	*Text description*
e. Are there horizontal coordination bodies and mechanisms (between ministries and sectors) at national level for planning/implementing/MEL NAS?	*Single select:* YES/NO/UNCLEAR
f. Are there vertical coordination bodies and mechanisms (between national and subnational levels) for planning/implementing/MEL NAS?	*Single select:* YES/NO/UNCLEAR
g. What is the revision cycle/ timeline?	*Text description*
h. Are updates of the NAS based on the CRA?	*Single select:* YES/NO/UNCLEAR
i. Are stakeholders involved in developing / revising the NAS?	*Multi select:* Consultation/participation/collaborative decision-making/NO/UNCLEAR
j. Do institutionalised advisory bodies (scientific, policy) play a role in the development/revision process?	*Single select:* YES/NO/UNCLEAR
4. Does the country have an adopted NAP in place?	*Single select:* YES/NO/UNCLEAR *If yes, complete 4a-l; if no or unclear, skip to question 5*
a. What is(are) the adoption date(s)?	*Text description* – year (YYYY)
b. What is(are) the title and link(s)?	*Text description*
c. Who is responsible for development of the NAP?	*Text description*
d. Who is responsible for implementation of the NAP?	*Text description*
e. Are there horizontal coordination bodies and mechanisms (between ministries and sectors) at national level for planning/implementing/MEL of the NAP?	*Single select:* YES/NO/UNCLEAR
f. Are there vertical coordination bodies and mechanisms (between national and subnational levels) for planning/implementing/MEL of the NAP?	*Single select:* YES/NO/UNCLEAR
g. What is the revision cycle/ timeline?	*Text description*
h. Are updates of the NAP based on the CRA?	*Single select:* YES/NO/UNCLEAR
i. Are stakeholders involved in developing / revising the NAP?	*Multi select:* Consultation/participation/collaborative decision-making/NO/UNCLEAR

j. Do institutionalised advisory bodies (scientific, policy) play a role in the development/revision process?	*Single select:* YES/NO/UNCLEAR
k. Is there a monitoring and evaluation system for the NAP?	*Single select:* YES/NO/UNCLEAR
l. Are updates based on results of monitoring and evaluation?	*Single select:* YES/NO/UNCLEAR
5. Does the country have an adopted SAP in place?	*Single select:* YES/NO/UNCLEAR *If yes, complete 5a-k; if no or unclear, skip to question 6* *In case of multiple SAPs the questions should be answered for each*
a. Which sectors are covered in sectoral plans?	*Text description*
b. What is(are) the adoption date(s)?	*Text description* - year
c. What is(are) the title(s) and link(s)?	*Text description*
d. Who is responsible for development of the SAP(s)?	*Text description*
e. Who is responsible for implementation of the SAP(s)?	*Text description*
f. What is(are) the revision cycle(s)/ timeline(s)?	*Text description*
g. Are updates of the SAP(s) based on the CRA?	*Single select:* YES/NO/UNCLEAR
h. Are stakeholders involved in developing / revising the SAP(s)?	*Multi select:* Consultation/participation/collaborative decision-making/NO/UNCLEAR
i. Do institutionalised advisory bodies (scientific, policy) play a role in the development/revision process?	*Single select:* YES/NO/UNCLEAR
j. Is there a monitoring and evaluation system for the SAP(s)?	*Single select:* YES/NO/UNCLEAR
k. Are updates of the SAP(s)based on results of monitoring and evaluation?	*Single select:* YES/NO/UNCLEAR
6. Are there any other unique policy documents covering adaptation?	*Single select:* YES/NO/UNCLEAR *If yes, complete 6a-c; if no or unclear, skip to question 7*
a. What is(are) the adoption date(s)?	*Text description* - YYYY
b. What is(are) the title and link(s)?	*Text description*
c. What does it cover?	*Text description*
7. Are any progress reports published on a regular basis (implementation/monitoring)?	*Single select:* YES/NO/UNCLEAR
8. Does the country have a (national) climate law addressing adaptation?	*Single select:* YES/NO/UNCLEAR *If yes, complete 8a-d; if no or unclear, skip to question 9*

a. Year	*Text description - YYYY*
b. Title and link	*Text description*
c. What policy fields are covered by the law?	*Multi select:* Mitigation/Adaptation
d. What governance level(s) is(are) covered by the law?	*Multi select:* National/Sub-national/other/unclear
9. Does the national adaptation legal act define adaptation targets/goal/objectives in an explicit way?	*Single select:* YES/NO/UNCLEAR *If yes, complete 9a-d; if no or unclear, skip to question 10*
a. How are targets/goals/objectives described?	*Multi select:* Quantitative/Qualitative
b. Are there sector-related goals?	*Single select:* YES/NO/UNCLEAR *If yes, complete 9bi; if no or unclear, skip to question 9c*
c. What are the sectors?	*Text description*
d. Are there sub-national adaptation targets/goals/objectives?	*Single select:* YES/NO/UNCLEAR *If yes, complete 9ci; if no or unclear, skip to question 10*
e. What are the sub-national targets/goals/objectives?	*Text description*
10. Does the country have other legislative acts governing elements of adaptation?	*Single select:* YES/NO/UNCLEAR *If yes, complete 10a-c; if no or unclear, skip to question 11*
a. Year	*Text description - YYYY*
b. Which piece of legislation (title) and link?	*Text description*
c. What policy fields covered by the law / aspect of adaptation policy making does it regulate?	*Text description*
11. Are aspects/elements of adaptation policy regulated by legal provisions?	*Single select:* YES/NO/UNCLEAR *If yes, complete 11a-m; if no or unclear, skip to question 12*
a. Mandate for developing / revising NAS / NAP / SAP / other?	*Multi select:* NAS/NAP/SAP/OTHER/NO/UNCLEAR
b. Obligation for CRAs at national and/or subnational levels?	*Multi select:* National level/Sub-national level/NO/UNCLEAR
c. Revision cycles of national adaptation policies (NAS, NAP, SAP)?	*Multi select:* NAS/NAP/SAP/OTHER//NO/UNCLEAR
d. Political and/or coordination responsibilities for developing and/or implementing national adaptation policies (NAS, NAP, SAP)?	*Multi select:* NAS/NAP/SAP/OTHER /NO/UNCLEAR

e. Establishment and mandate of horizontal coordination bodies?	*Single select:* YES/NO/UNCLEAR
f. Establishment and mandate of vertical coordination bodies?	*Single select:* YES/NO/UNCLEAR
g. Roles of advisory bodies (scientific, political, administrative)?	*Single select:* YES/NO/UNCLEAR *If yes, complete 11gi; if no or unclear, skip to question 9h*
h. What are the advisory bodies and their roles?	*Text description*
i. Reporting obligations for sectoral authorities and/or subnational authorities?	*Multi select:* Sectoral/Sub-national/NO/UNCLEAR
j. Responsibilities for other specific roles of actors in adaptation processes?	*Single select:* YES/NO/UNCLEAR *If yes, complete 11ii; if no or unclear, skip to question 11j*
k. What are the actors and their responsibilities?	*Text description*
l. Obligations for subnational government levels to set up adaptation plans or strategies (regional, municipal)?	*Single select:* YES/NO/UNCLEAR
m. Obligations for mainstreaming of adaptation into sector policies (e.g. set-up of sectoral adaptation plans)?	*Single select:* YES/NO/UNCLEAR
n. Mandatory climate impact assessments of legislative proposals?	*Single select:* YES/NO/UNCLEAR
o. Legal provisions for funding / financing of adaptation?	*Multi select:* Funding/Financing/NO/UNCLEAR
12. Is funding provided for the implementation of the adaptation measures/actions?	*Single select:* YES/NO/UNCLEAR *If yes, complete 12a-b; if no or unclear, skip to question 13*
a. Who provides the funding?	*Text description*
b. Are there specific funding streams?	*Single select:* YES/NO/UNCLEAR
13. Is financing provided for the implementation of the adaptation measures/actions?	*Single select:* YES/NO/UNCLEAR *If yes, complete 13a; if no or unclear, skip to question 14*
a. Who is financing?	*Text description*

Monitoring, Evaluation and Learning (MEL)

14. Are the adaptation policy targets/goals/objectives in legal acts monitored (using MEL tools)?	*Single select:* YES/NO/UNCLEAR *If yes, complete 14a-c; if no or unclear, skip to question 15*

a. Are there legal requirements to monitor adaptation?	*Single select:* YES/NO/UNCLEAR
b. Are indicators used to monitor targets/goals/objectives?	*Single select:* YES/NO/UNCLEAR *If yes, complete 14bi-14bii; if no or unclear, skip to 14b*
c. What are the indicators used for (monitoring progress, results, output, outcomes etc.)?	*Text description*
d. Are indicators in other fields utilized to monitor adaptation?	*Multi select:* SDG/SFDRR/OTHER
e. Are other tools utilized to monitor targets/goals/objectives (e.g., qualitative tools, such as workshops)?	*Single select:* YES/NO/UNCLEAR *If yes, complete 14ci; if no or unclear, skip to 15*
f. Which other tools are utilized for monitoring?	*Text description*
15. Does the adaptation legal act include reporting obligations?	*Single select:* YES/NO/UNCLEAR *If yes, complete 15a-b; if no or unclear, skip to 16*
a. To whom is reporting performed (national ministries/agencies/European institutions etc.)?	*Text description*
b. What needs to be reported?	*Text description*
16. Does the country report how monitoring and reporting activities feeds into adaptation policy development (=learning)?	*Single select:* YES/NO/UNCLEAR *If yes, complete 16a; if no or unclear, skip*
a. How does the country make use monitoring and reporting (e.g., development of new policy based on MEL activity or changes in MEL processes themselves)?	*Text description*

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