

1 Setting the scene for public intervention on adaptation

Key messages

- Adaptation by societies and economies alone (autonomous adaptation) is not considered to be sufficient to address the complexity, range and magnitude of risks and opportunities associated with climate change.
- Public intervention is needed to complement and support adaptation activities taken by private actors, and to ensure due consideration of climate risks for public-sector decision-making.
- A wide range of policy instruments to identify appropriate policy responses is at hand.
- In the last 10 years, many policy frameworks have been developed to help improve the capacity of societies and economies to adapt.

Observed climate change impacts and related costs as initial drivers for public intervention

Significant changes in climate and its impacts are already visible in Europe today. Increasing temperatures, rising sea level, melting of glaciers and ice sheets as well as more intense and frequent extreme weather events are among the challenges already driven by climate change. IPCC AR5 (IPCC WGII, 2014) confirms an increase of key risks for Europe, with climate change projected to have adverse impacts in nearly all sectors and across all subregions, albeit with large differences in impact types. Regional variations have been shown by the EEA (2012) mapping the observed and projected climate change and impacts for the main biogeographical regions in Europe. Further climate change impacts are projected for the future, which can increase existing vulnerabilities and aggravate socio-economic imbalances in Europe (EEA, 2012). However, adaptation prospects exist that have the potential to lower projected risks.

Impacts of climate change that are already observed (in particular damages and related direct and indirect costs caused by extreme weather events) are often the initial driver for public authorities to act on adaptation. Adaptation involves reducing risk and vulnerability, seeking opportunities, and building the capacity of human and natural systems to cope with climate impacts, as well as mobilising that capacity by implementing

decisions and actions (Tompkins et al., 2010). Over the last decade, significant progress has been made in developing policy to adapt to climate change. This progress is connected to the growing awareness that it is necessary to deliberately plan adaptation to proactively address potential risks and opportunities, and take into account the wider socio-economic dimensions.

Concerted action is needed to comprehensively address the spectrum of climate change risks

Further to the clear recognition that conditions have changed or are about to change, efforts in developing and implementing adaptation policies are also driven by the fact that autonomous action by economies and societies is expected to remain insufficient to address the complexity, range and magnitude of risks associated with climate change and socio-economic developments. Public intervention can thus be considered as a strategic and collaborative effort in coping with existing and future climate risks and exploiting opportunities. This is particularly relevant for an interdisciplinary arena like climate change adaptation, where a multitude of actors need to join forces for concerted action. Governments therefore have the important role of supporting society, by intervening with a mix of policies and action for certain negative effects and opportunities of climate change that cannot be addressed by private actors and market forces alone.

Public authorities (national, regional and local) are thus challenged with building the policy competence to take up this responsibility under the condition that any public intervention shall complement the market and individual activities, and not replace or duplicate them (Edquist and Chaminade, 2006).

Aims and objectives of public intervention on adaptation

The approaches for public intervention are mainly driven by the aim to take decisions that remain both robust (to cover a broad spectrum of plausible climate change scenarios) and flexible (so the measures can be changed if conditions change) to cope with an uncertain future (Schauser et al. in Prutsch et al., 2014). In this regard, results from scientific research can additionally highlight areas where public intervention is needed or needs to be adjusted, and thus inform decision-making with evidence.

Public intervention on adaptation is therefore framed around the general objectives of avoiding adverse effects of climate change on the environment, society and the economy, and of making the best use of potential opportunities, as well as building adaptive capacity to address the associated challenges. This includes supporting a productive, healthy and resilient society that is well-informed and prepared for the challenges and opportunities associated with a changing climate. More specifically, a mix of policies and action will foster well-targeted and concerted adaptation initiatives that enable and stimulate individual actors to proactively cope with changing conditions.

Making adaptation operational

There is an array of policy instruments, both regulatory and non-regulatory, which can be made operational for public intervention on adaptation. These include initiatives to build adaptive capacity, enhance knowledge generation and dissemination, facilitate mainstreaming, set new or amend existing regulations and standards, provide financial support (e.g. incentives, subsidies and taxes), and make use of insurance schemes. Consideration of a wide range of potential policy instruments is essential if policymakers are to identify the best — most efficient, effective, equitable, acceptable (to authorities, society and the market) — options for public intervention (Australian Government, 2009). The choice of suitable

policy instruments shall clearly respond to the perceived problems and risks, and will need to be geared towards being complementary and supportive of adaptation activities taken by all stakeholders, including private actors. This will depend on various conditions, such as the political system of a country, coordination and consultation mechanisms and existing instruments relevant for adaptation. The choice of policy instruments is also often invariably constrained, to some extent, by the existing array of public interventions. Thus, an assessment of current policy instruments already operating in the policy spaces relevant to adaptation is a prerequisite for a good policy design process (Australian Government, 2009). In addition, heterogeneity in the choice of policy instruments is related to the context-specific nature of adaptation (differences in resources, values, needs and perceptions among and within societies) that governments need to take into account (IPCC, 2014). Thus approaches for public intervention vary, reflecting different governance and societal systems and policymaking practices.

Adaptation policy developments across territorial levels

Significant advancements have been made in establishing policy frameworks at different levels of governance that share the overarching intention to support societies to adapt.

International (UNFCCC)

At international level, the UNFCCC agreed that adaptation is imperative as a second element of climate policy (complementary to mitigation). European countries and the European Commission, being parties to the Convention, have committed themselves to 'formulate, implement, publish and regularly update national and, where appropriate, regional programmes [...] and measures to facilitate adequate adaptation to climate change' (Article 4, paragraph 1 of the UNFCCC Convention). This commitment has been refined under the Cancun Adaptation Framework (CAF) with Decision 5/CP.17 on NAPs (National Adaptation Plans ⁽⁶⁾). Here, the Conference of Parties acknowledged 'that national adaptation planning can enable all developing and developed country parties to assess their vulnerabilities, to mainstream climate change risks and to address adaptation'. By the end of 2015, a new international climate change agreement should

⁽⁶⁾ See <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

be negotiated within the UNFCCC. Several topics are being discussed as potential elements of such an agreement, relevant for adaptation: long-term and collective aspects of adaptation, NAPs, institutional arrangements, financing, incentivising private sector investment, technology transfer, capacity-building, and transparency of action and support (through monitoring, reporting and verification).

European Union

Since planning for adaptation requires a strategic approach at European level, the European Commission has prepared an adaptation framework for Europe to ensure timely, efficient and effective adaptation actions coherently across sectors and levels of governance.

The European Commission and EEA (EEA, 2013) highlighted five main reasons for the EU to take action on climate change adaptation:

- many climate change impacts and adaptation measures have cross-border dimensions;
- climate change and adaptation affect EU policies;
- solidarity mechanisms between European countries and regions might need to be strengthened because of climate change vulnerabilities and adaptation needs;
- EU programmes could complement Member State resources for adaptation;
- economies of scale can be significant for research, information- and data-gathering, knowledge-sharing and capacity-building.

The development process for an EU adaptation framework first led to the adoption of the 2007 Green Paper 'Adapting to climate change in Europe – options for EU action', recognising that all parts of Europe will increasingly feel the adverse effects of climate change. In 2009 the White Paper 'Adapting to climate change: Towards a European framework

for action' set out concrete steps to be taken, including mainstreaming in EU policy areas.

In April 2013, the EU strategy on adaptation to climate change (EC, 2013) ⁽⁷⁾, was adopted. Commonly known as the EU Adaptation Strategy, it is based on three objectives.

First, Member States are encouraged to adopt comprehensive adaptation strategies, in order to achieve coordination and coherence at the various levels of planning and management. In order to help EU Member States with national adaptation planning processes, the EU Adaptation Strategy provides guidelines ⁽⁸⁾.

Second, the strategy promotes better-informed decision-making by addressing gaps in knowledge about adaptation, through the EU research and innovation programme ⁽⁹⁾ and by further developing the European Climate Adaptation Platform ⁽¹⁰⁾ (Climate-ADAPT) as the 'one-stop shop' for sharing adaptation information in Europe.

Third, it promotes adaptation in key vulnerable sectors by integrating its consideration in EU policies, programmes and funds. It builds on the mainstreaming already being addressed after adoption of the White Paper in 2009, including in policy areas such as agriculture, inland water, forestry, biodiversity and transport. The 2013 strategy specifically addresses agriculture and fisheries policies; it aims not only to ensure that Europe's infrastructure is made more resilient, but also to involve private actors in adaptation by encouraging the use of insurance and financial products so as to increase resilience in investment and business decisions.

The EU has also agreed that at least 20 % of its budget for the 2014–2020 period should be spent on climate change-related action, including mitigation and adaptation ⁽¹¹⁾. Adaptation actions are mainstreamed (integrated) throughout EU sectoral policies, using a range of EU funding mechanisms, including the financial instrument for the environment, LIFE ⁽¹²⁾, five European Structural and Investment Funds ⁽¹³⁾ as well as funding research and innovation through the

⁽⁷⁾ See http://ec.europa.eu/clima/policies/adaptation/what/documentation_en.htm.

⁽⁸⁾ See http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_134_en.pdf.

⁽⁹⁾ See <http://ec.europa.eu/programmes/horizon2020/en>.

⁽¹⁰⁾ See <http://climate-adapt.eea.europa.eu>.

⁽¹¹⁾ See http://ec.europa.eu/clima/policies/adaptation/financing/index_en.htm.

⁽¹²⁾ See <http://ec.europa.eu/environment/life>.

⁽¹³⁾ See http://ec.europa.eu/clima/policies/adaptation/financing/funds/index_en.htm and <http://climate-adapt.eea.europa.eu/web/guest/eu-adaptation-policy/funding/esi>.

Horizon 2020 programme, with 35 % dedicated to climate-related research.

It will be important in the coming years to monitor and evaluate the progress, effectiveness and efficiency of ongoing and planned EU and national actions. Regarding actions by EU Member States, the EU strategy mentions that the European Commission will develop in 2014/2015 an adaptation preparedness scoreboard that includes indicators for measuring member countries' level of readiness. In 2017, the European Commission will report to the European Parliament and the Council on the state of implementation of the EU Adaptation Strategy, and propose its review if needed.

Countries

National adaptation strategies (NASs) and plans provide a general and mostly non-binding policy framework for guiding adaptation activities of government authorities and non-state actors. As for other policy domains, policymaking at national level has a key role in creating an enabling environment for planning and implementing concrete actions. It is at this level that medium- to long-term adaptation objectives need to be formulated and gain political support, and where coordination mechanisms are to be established in order to secure engagement of key actors. Overall, the development of a national adaptation policy (strategy and/or plan) serves as an instrument that provides the necessary frame for adaptation through coordinating the consideration of climate change across relevant sectors, geographical scales and levels of decision-making. Analyses in the EU project BASE (Bottom-up climate Adaptation Strategies towards a sustainable Europe ⁽¹⁴⁾) have shown that national adaptation strategies are very diverse, but the process of developing them has put adaptation on the political agenda (Hildén et al., 2014; Russel et al., 2014).

Twenty-one EEA member countries have adopted a NAS, to date. Most of the existing strategies include limited information on implementation (e.g. monitoring and financing of adaptation action) and therefore, 12 countries in total have set out more detailed national adaptation plans (NAPs). Table 1.1 provides an overview of all EEA member countries with NASs/NAPs in place, consolidating information derived from the country pages on Climate-ADAPT, responses to the self-assessment and further feedback from the Eionet consultation on the draft version of this report.

The commitments to establish and adopt policy frameworks for adaptation at international, EU and national levels, as well as ongoing activities at regional and sectoral levels, confirm the deliberate intention of public authorities to help improve the capacity of societies and economies to adapt. Yet, for policies to become effective, collaborative effort is needed for implementation. Enhancing awareness and building trust and cooperation between actors in public administrations, the civil society and private businesses promotes the sustainability and legitimacy of any adaptation policy process.

⁽¹⁴⁾ See <http://base-adaptation.eu>.

Table 1.1 Status of national adaptation strategies and national adaptation plans in European countries

| EEA member countries | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------------|------|------|------|------|------|------|------|------|------|------|
| Austria | | | | | | | | | | |
| Belgium | | | | | | | | | | |
| Bulgaria | | | | | | | | | | |
| Croatia | | | | | | | | | | |
| Cyprus | | | | | | | | | | |
| Czech Republic | | | | | | | | | | |
| Denmark | | | | | | | | | | |
| Estonia | | | | | | | | | | |
| Finland | | | | | | | | | | |
| France | | | | | | | | | | |
| Germany | | | | | | | | | | |
| Greece | | | | | | | | | | |
| Hungary | | | | | | | | | | |
| Iceland | | | | | | | | | | |
| Ireland | | | | | | | | | | |
| Italy | | | | | | | | | | |
| Latvia | | | | | | | | | | |
| Liechtenstein | | | | | | | | | | |
| Lithuania | | | | | | | | | | |
| Luxembourg | | | | | | | | | | |
| Malta | | | | | | | | | | |
| Netherlands | | | | | | | | | | |
| Norway (*) | | | | | | | | | | |
| Poland | | | | | | | | | | |
| Portugal | | | | | | | | | | |
| Romania | | | | | | | | | | |
| Slovakia | | | | | | | | | | |
| Slovenia | | | | | | | | | | |
| Spain | | | | | | | | | | |
| Sweden | | | | | | | | | | |
| Switzerland | | | | | | | | | | |
| Turkey | | | | | | | | | | |
| United Kingdom | | | | | | | | | | |

Note: No policy

National adaptation strategy (NAS) in place

National adaptation strategy (NAS) and national and/or sectoral adaptation plans (NAP/SAP) in place

(*) Norway had a NAP before a NAS.

Sectors within countries are at various levels of advancement. This diversity is not reflected by the responses provided by European countries to Question 12 of the self-assessment survey. Adaptation is an iterative process for the sectors involved, and calls for consideration of 'Agenda-setting', 'Formulation', 'Decision', 'Implementation' and 'Monitoring and evaluation' issues, at various levels of advancement.

More information on the levels of advancement within sectors can be found in Key topic 6 (cf. Section 2.6).