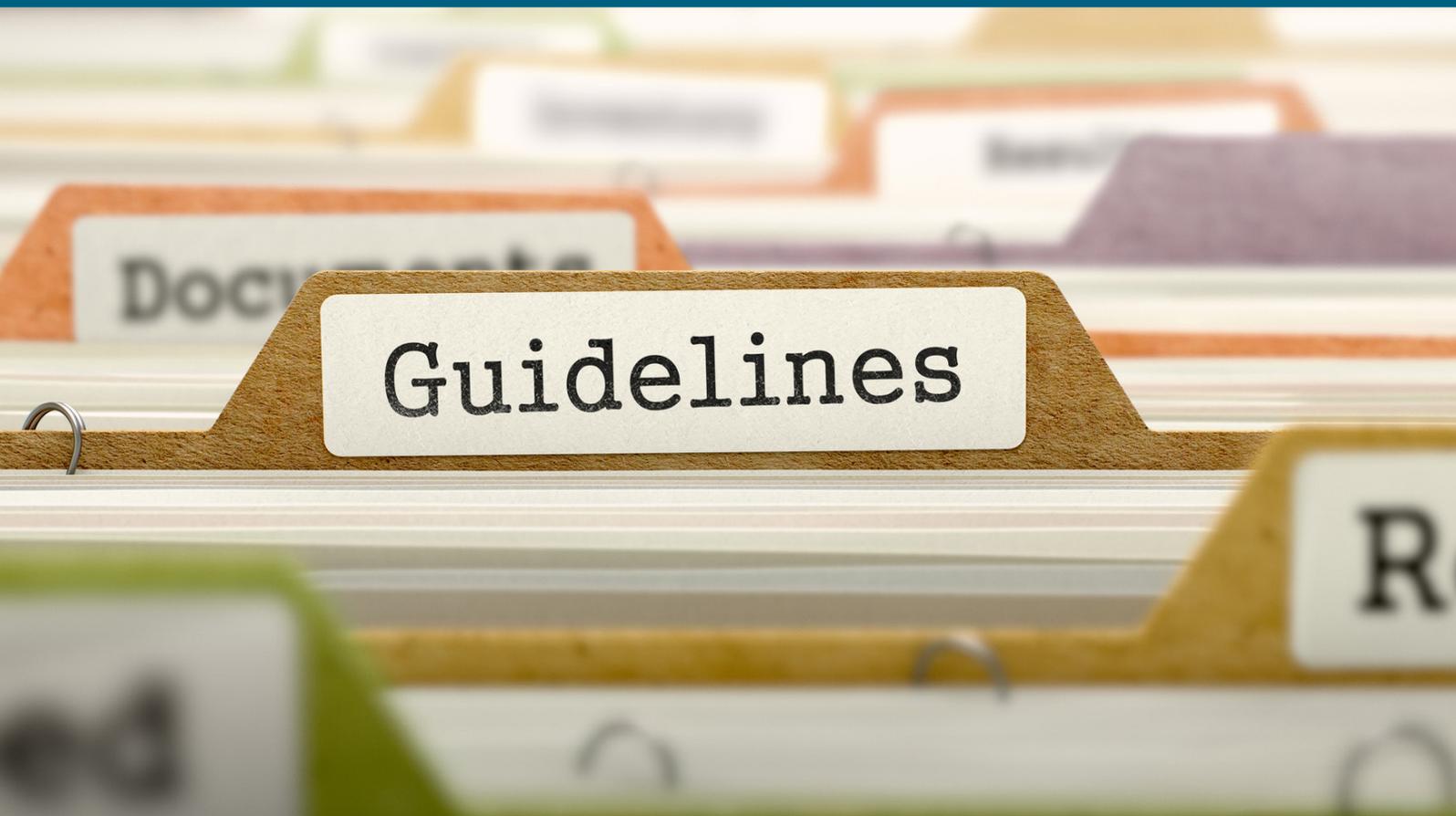




BOTTOM-UP CLIMATE
ADAPTATION STRATEGIES
TOWARDS A SUSTAINABLE EUROPE



Guidelines for EU and Member State policy makers



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under Grant Agreement No. 308337 (Project BASE). The contents of this document are the sole responsibility of BASE and can in no way be taken to reflect the views of the European Union.

Guidelines for EU and Member State policy makers

Grant agreement no:	308337
Work Package:	7
Deliverable number:	7.3
Partner responsible:	UNEXE
Deliverable author(s):	Duncan Russel (lead author), Silke Beck, Bjørn Bedsted, Inês Campos, Alessio Capriolo, Ioanna Grammatikopoulou, Andreas Hastrup Clemmensen, Mikael Hildén, Anne Jensen, Eleni Karali, Eliska Lorencová, Kirsi Mäkinen, Helle Ørsted Nielsen, Gil Penha-Lopes, Roos den Uyl, Sabine Weiland, Marta Sylla.
Planned delivery date:	31 st August
Actual delivery date:	31 st August
Dissemination level:	Public

This project has received funding from the European Union's Seventh Framework Programme for Research, Technological Development and Demonstration under Grant Agreement No. 308337 (Project BASE). The contents of this document are the sole responsibility of BASE and can in no way be taken to reflect the views of the European Union.



Summary:

This deliverable outlines 21 policy-relevant recommendations – and supporting evidence – for policy-makers working at the EU, national and local levels to support adaptation decision-making. The recommendations are based on the combined findings of the BASE project and are differentiated between different policy levels, yet generic enough to be applied to different decision-making contexts. The lessons are based around the following 5 themes: 1) policy integration, 2) efficiency of policy, 3) knowledge use and learning, 4) stakeholder participation, and 5) the distribution of responsibility for adaptation.

An important overall empirical finding from BASE is that CCA planning is context-specific across countries, regions, local areas and sectors. Thus, the recommendations do not follow a one-size-fits-all approach. Instead, they provide more general suggestions to European decision-makers working at different governance levels on different policy issues, approaches, processes, institutional arrangements, policy instruments and decision support tools. The purpose is to support for more efficient and coherent adaptation decision-making across the policy cycle, and emergent synergies between bottom-up and top-down CCA policies and actions. In this context, the analysis identified the following key policy lessons that a targeted application of the recommendations can address:

- Since resources are often scarce, adaptation planning should systematically search for measures that provide co-benefits to ensure that CCA is undertaken timely and in an effective (i.e. measures are effective in decreasing vulnerabilities and risks) and sustainable (i.e. adaptation measures ensure well adapted societies for present and future generations) way. Local actions are crucial in this respect and by facilitating and encouraging the sharing of innovative local solutions, national governments and the EU can advance adaptation more than through central planning only.
- CCA requires a broad knowledge base (e.g. climate models, climate and socio-economic scenarios) that responds to requests of local decision-makers. Climate scenarios should be easily understood, usable and applicable by local practitioners and decision-makers. However, all actors need a basic awareness of climate change and factors affecting vulnerability. This requires informed public discussions and political debates on the topic.
- As climate change is a complex problem, there is not a one-size-fits-all toolbox. Integrated solutions need to be developed reflecting also contextual local conditions. BASE case studies show CCA benefits from the use of different and complementary sources of information (from economic model analysis to stakeholder approaches) and expertise (e.g. scientific, administrative, and lay-person) levels.
- There is still an untapped potential in stakeholders. Participatory experiences in BASE cases studies clearly show that CCA concerns political choices and is not only a matter of finding the “right” technical solutions. Participation allows for a higher level of social inclusion, better outcomes and conflict resolution, and should therefore be a key feature of CCA decision-making processes.
- There is still a gap between CCA decisions and their implementation. Most actions taken have not been driven by policies. In many cases, drivers for climate change adaptation result from local vulnerability and risk perceptions triggering local initiatives.
- Recognising and dealing with trade-offs between different sectors and levels of governance are central for implementing solutions advancing adaptation to climate change. A key aspect of this is clearly establishing responsibilities between different levels of government and between state and non-state (non-governmental organisations, business, citizens) actors.
- Research should be collaborative at multiple levels: multidisciplinary (i.e. different scientific disciplines provide complementary knowledge and information), interdisciplinary (knowledge results from the intersection of diverse scientific disciplines), and transdisciplinary (knowledge results from the intersection of different systems of knowledge, e.g. traditional, local and scientific knowledge).

Content

1 Policy Guidance: Recommendations for supporting bottom-up climate change adaptation in Europe	5
2 Policy Recommendations for climate change adaptation decision-makers at multiple levels of governance	7
2.1 Developing the Policy Recommendations	7
2.2 Policy design should foster integration of adaptation and ensure coherence	8
2.2.1 Systematic integration of climate adaptation objectives to advance policy coherence	8
2.2.2 Strong and sustained leadership to support policy coordination	9
2.2.3 Consider the impact of measures across sectors and border.....	9
2.2.4 EU support for local level co-benefits of adaptive solutions.....	10
2.2.5 Combinations of policy instruments should be favoured	11
2.2.6 Integrate sustainable development goals in adaptation policy.....	11
2.3 Adaptation policies should be supported by <i>ex ante</i> economic analysis for efficient short- and long-term adaptation decision making	11
2.3.1 Early use of <i>ex ante</i> assessments	12
2.3.2 Understanding cost-effectiveness through integrated economic assessments.....	12
2.3.3 Use a mix of tailored <i>ex ante</i> assessment methods.....	13
2.3.4 Take indirect effects of adaptation measures into account	14
2.3.5 Take co-benefits and low regret measures into account	15
2.4 Knowledge use and learning in adaptation planning should be ensured through multiple means	15
2.4.1 Tailor knowledge, information, data and their dissemination to user needs	16
2.4.2 Enhance visibility and usability of Climate-ADAPT	16
2.4.3 Encourage policy learning through sectoral mechanisms	17
2.4.4 Include criteria and monitoring for funding adaptation actions in EU funding mechanisms....	17
2.4.5 Specific evaluation criteria promote learning on adaptation policy design and progress.....	18
2.5 Public participation should play a central role in designing and implementing adaptation measures	18
2.5.1 Decisions on adaptation issues is a political exercise.....	18
2.5.2 Promote public participation in climate change adaptation.....	19
2.5.3 Grant choice of participatory methods equal attention to that of economic models	20
2.6 A clear distribution of responsibility for adaptation action should be established and consider the relationship between state and non-state actors and levels of governance	20

2.6.1	Adopt and implement adaptation measures at the suitable level of decision-making	21
2.6.2	Address coherence to enhance synergies between state- and non-state measures.....	21
3	Conclusions.....	23
4	ANNEX Supporting evidence	24
4.1	Theme 1: Policy design should foster integration of adaptation and ensure coherence	24
4.1.1	List of recommendations.....	24
4.1.2	Insights behind recommendations.....	24
4.1.3	References.....	28
4.2	Theme 2: Adaptation policies should be supported by <i>ex ante</i> economic analysis for efficient short- and long-term adaptation decision-making.....	30
4.2.1	List of recommendations.....	30
4.2.2	Insights behind recommendations.....	30
4.2.3	References.....	32
4.3	Theme 3: Knowledge use and learning in adaptation planning should be ensured through multiple means.....	33
4.3.1	List of recommendations.....	33
4.3.2	Insights behind recommendations.....	33
4.3.3	References.....	36
4.4	Theme 4: Public participation should play a central role in designing and implementing adaptation measures	37
4.4.1	List of recommendations.....	37
4.4.2	Insights behind recommendations.....	37
4.4.3	References.....	38
4.5	Theme 5: A clear distribution of responsibility for adaptation action should be established and consider the relationship between state and private actors and levels of governance	40
4.5.1	List of recommendations.....	40
4.5.2	Insights behind recommendations.....	40
4.5.3	References.....	42

1 Policy Guidance: Recommendations for supporting bottom-up climate change adaptation in Europe

Climate change adaptation (CCA) is becoming an important topic for policy making across the globe. Decision-makers at diverse levels of governance – i.e. from local to national and global – need to find ways of supporting and motivating deliberative and autonomous¹ adaptation activities in response to climate change, as well as determining when and what public measures are appropriate.

This document condenses the policy relevant findings and analysis of the BASE project (Bottom-Up Adaptation Strategies for a Sustainable Europe),² and its deliverables, in the form of a set of recommendations to be used by decision-makers for CCA policies in Europe with a focus on policy coherence, efficiency and bottom-up adaptation processes. The intention is to provide guidance to European decision-makers working at different governance scales with information on the different policy processes, institutional arrangements, policy instruments, and decision support tools to enhance efficiency and policy coherence for adaptation across the whole decision making cycle. In so doing, this guidance seeks to encourage emergent synergies between bottom-up and top-down CCA policies and actions. Bottom-up refers here to the direction of an initiative or adaptation process taken by a group of people, such as a local community or a municipality, and top-down refers to more centrally driven initiatives from national governments and the European Union. The recommendations address well-known challenges of climate change adaptation policies such as how to address context-specific conditions, how to produce coherent policy, how to best identify and use available knowledge regarding potential risks, vulnerabilities, and how to prioritize among adaptation measures (according to a variety of criteria, such as costs, benefits and secondary³ effects of those measures).

The recommendations are particularly based on lessons learned, and information collected, from 23 European CCA empirical case studies, as well as the use of methods, approaches and tools applied and developed during four years of research in the BASE project (see Figure 1 below). The case studies cover different sectors, namely: Agriculture and Forestry; Biodiversity and Ecosystems Services; Water Resources and Health; Coastal Zones; Human Settlements and Infrastructure. The case studies also cover rural and urban regions, and diverse levels of governance (e.g. grassroots communities, municipalities, country regions, EU Member States) across different European countries, namely: the Czech Republic; Denmark; Finland; Germany; Italy; Portugal; Spain, and United Kingdom (England).

Crucially, the recommendations address key themes of the EU Strategy on adaptation to climate change, adopted by the European Commission in April 2013, namely: promoting Member State actions; informed decision making; promoting sectorial actions. However, the recommendations go well beyond these three themes as they stem from a broad set of policy challenges and opportunities which have emerged from the

¹ autonomous adaptation refers to actions undertaken by individual actors without central coordination or resources

² <http://base-adaptation.eu/>

³ secondary effects refer broadly to different indirect and knock-on effects, such as the development of new skills that arise from adaptation measures

extensive research of the BASE project, other similar efforts such as ToPDAd⁴, Ramses⁵ and Climsave⁶ and wider academic developments. An important overall empirical finding from BASE is that climate change adaptation (CCA) planning is context-specific across countries, regions, local areas, and sectors. A one-size-fits all solution does not exist. CCA also depends on the specific economic and societal developments that Europe will experience in the next 50 years and more. Adaptation policy is, in other words, a contextual and iterative process where planning has to be regularly revisited, and refined according to changing conditions, projections and interests of stakeholders. Thus, while targeted at different levels of government, the recommendations are generic enough to be applied and adapted for specific contexts. That being said, BASE has identified some more generalized patterns and has developed a generic tool, the BECCA, for the evaluation of adaptation action, which can be used to highlight these patterns (see 2.4.5).

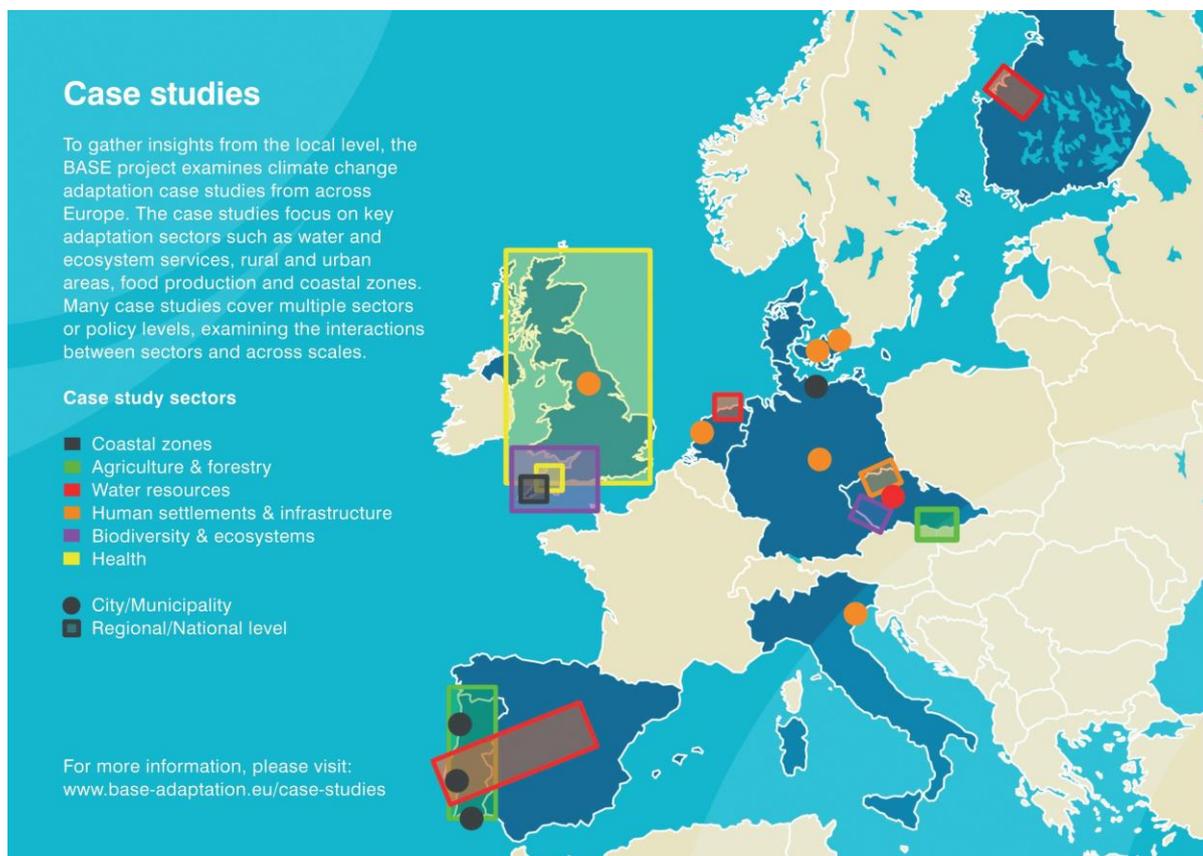


Figure 1: Map of the BASE case study sites

In what follows, the methodology for retrieving policy recommendations is briefly described. Based on this approach five themes are identified: 1) policy integration, 2) efficiency of policy, 3) knowledge use and

⁴ <http://www.topdad.eu/>

⁵ <http://www.ramses-cities.eu/>

⁶ <http://www.climsave.eu/climsave/index.html>

learning, 4) stakeholder participation, and 5) the distribution of responsibility for adaptation. A total of 21 general policy recommendations are provided drawing on a multilevel governance perspective. Each general recommendation is elaborated on through detailed and specific suggestions directed at policy-makers at the EU, national and/or local levels. The evidence underpinning these recommendations, with reference to specific BASE outputs and deliverables, is summarised in a supporting annex at the end of this document.

2 Policy Recommendations for climate change adaptation decision-makers at multiple levels of governance

2.1 Developing the Policy Recommendations

Policy relevant findings were distilled from BASE deliverables and recommendations were systematically developed through a methodological strategy that included the following steps:

1. A document analysis of BASE deliverables and outputs: the initial analysis provided a synthesis of policy relevant findings from each of the BASE reports. The analysis was conducted by BASE partners who had not been involved in the production of the deliverable or output in order to benefit from fresh perspectives and insights. Following the results of the document analysis, every policy relevant finding was collected and listed in a first proposal for the recommendations.
2. Web meetings: a series of discussions took place between deliverable authors and BASE project workpackage leaders and authors to ensure that deliverable findings had been appropriately selected and interpreted. During this period the first draft received several rounds of edits by its co-authors.
3. Testing recommendations in a stakeholder workshop: this event took place in Brussels (9th of June, 2016) with a focus on the more relevant recommendations in relation to the European Adaptation Strategy.
4. Recommendations were critically reviewed and discussed in a final meeting of BASE researchers and authors.

In what follows, first a general statement is made in the heading broadly corresponding to the key themes identified in the introduction. The subsequent text elaborates the basic statement, briefly contextualising the statement followed by a set of more specific recommendations. As the implications of the broader recommendations differ between levels of governance, a coding system has been used in the recommendations to help potential users of this document to identify actions for their specific level of governance, namely:



for the **EU level**



for **national level/Member States**



for **local level**

2.2 Policy design should foster integration of adaptation and ensure coherence

Uncoordinated action across policy sectors and levels of governance may lead to higher costs, sub-optimal or the reduced efficiency of CCA plans, and even to mal-adaptation, thus undermining the adaptation objectives. Therefore, decision-makers should ensure that adaptation policy actions and objectives are coherent, and that policy instruments are formally integrated or coordinated across different levels of governance (vertical integration), as well as within and across sectors (horizontal integration) such as climate mitigation, environment and nature protection policies, agricultural development, economic strategies and urban strategies. Linking adaptation policy objectives explicitly with sustainability goals – such as the United Nations’ Sustainable Development Goals (SDGs) or their specification at a regional or national level – would help to make adaptation policies more consistent with other development policies, and to create synergies and co-benefits for long-term (sustainable) climate change adaptation. In the absence of coordination processes, cross-sector and multi-level government tensions and conflicts may hinder opportunities to identify useful policy synergies over the medium and long-term.

2.2.1 Systematic integration of climate adaptation objectives to advance policy coherence

Climate change adaptation objectives should be systematically integrated into policies, plans or programs at different governance levels and across different sectors to advance policy coherence



EU decision-makers, especially DG Clima, should ensure and demonstrate the integration of core CCA policy issues into relevant policy sectors and should facilitate consultations with sectoral actors to promote awareness of specific and general adaptation issues. Moreover, DG Clima should demonstrate and provide examples of: the extent to which the EU Adaptation Strategy has positively promoted action in Member States; innovative approaches to adaptation that can be more readily applied across Europe; how significant global developments (e.g. international climate policy) have been integrated into policy to push adaptation knowledge and actions from a global perspective.



National policy actors should: i) evaluate how coordination procedures across policy sectors and policy making levels are being used to promote awareness of adaptation issues; ii) evaluate how and what policy instruments are being used to integrate adaptation into sectoral and local policies; and iii), where necessary, make adjustments to improve performance.



Local actors should: i) engage with key stakeholders in other relevant policy areas when developing local adaptation; ii) identify and engage with relevant regional partners to developing responses to climate change challenges, in cooperation with key actors at national and EU level.

2.2.2 Strong and sustained leadership to support policy coordination

Policy coordination for more integrated policies on climate change adaptation should be supported by strong and sustained high-level leadership



The EC (European Commission) should provide leadership by explicitly requiring all DGs to identify potential conflicts and synergies among sectoral policies, and by introducing mechanisms for dealing with CCA trade-offs and conflicts between policy objectives in sector policies.



National decision-makers have national adaptation strategies (NAS) as an instrument of leadership. NASs should explicitly consider the consistency between climate adaptation and other policy objectives, as well as the relative weight to be placed on climate adaptation priorities *vis-a-vis* other policy objectives. Moreover, national governments should set up coordinated discussions on long-term strategies and regularly monitor progress made by sectors.



Local politicians and public administrations should take direct leadership in searching for and implementing adaptation measures that provide co-benefits from short to long-term perspectives, and within multiple sectors.

2.2.3 Consider the impact of measures across sectors and border

Decision-makers should explicitly consider how specific measures affect adaptation in other sectors and locations, including across borders



EU decision-makers, in particular DG Clima, should provide guidance on how to develop action plans that recognize multiple interactions and interdependencies between sectors and locations, and across borders. This can help identify trade-offs and the benefit of local measures in relation to other areas. It can also lower the risk of maladaptation.



National decision-makers should be aware that social-ecological complexity can impact upon the effectiveness of adaptation decisions in some sectors. CCA programmes, jointly coordinated by central and local governments, are therefore required. National governments should also provide proactive and sustained leadership creating and maintaining forums for sharing and exchanging adaptation experience with stakeholders across policy sectors and governance levels.



Local decision-makers should be aware that implementing adaptation decisions may cause secondary effects in neighbouring regions. When exploring the co-benefits and tradeoffs related to CCA measures, the secondary effects (positive or negative) impacts affecting neighbouring regions should always be considered.

2.2.4 EU support for local level co-benefits of adaptive solutions

Innovative adaptation solutions that offer co-benefits are often developed at the local level, and they should be facilitated and supported by EU and national policy frameworks and financial mechanisms



EU decision-makers can promote innovative CCA measures at the local level by ensuring that regulatory frameworks are in place. Moreover the EC can review current policy frameworks to ensure that, for example, requirements related to funding rules do not become a barrier to developing innovative CCA ideas, and to ensure that funding schemes are sufficiently flexible to support innovative approaches to climate change adaptation. Recognizing that financing is often a key challenge for adaptation, the EC can promote financing by encouraging private agents to invest in climate change adaptation through incentives and rules for, for example, infrastructure investments.



National decision-makers can enforce and review the domestic implementation of EU policies, - e.g. cross-compliance requirements in the Common Agricultural Policy – in a manner that aims to identify innovative and integrated adaptation approaches. Targeted budgeting is needed to support innovative local level adaptation, and to ensure that national funding does not provide disincentives for local investments. Where local and private actors either do not have a direct incentive and/or the funds to adapt, national policy-makers may consider establishing co-funding schemes for CCA innovation. National adaptation strategies should search for ways to offer incentives for investing in climate adaptation measures and help put in place co-financing mechanisms with public and private funds. Also, much greater attention is needed for developing compensation plans for more vulnerable communities, which may suffer serious losses, even when adaptation measures are implemented.



Local decision-makers can help facilitate innovative and integrated policy solutions by bringing together stakeholders at the local level and promoting collective strategic plans for vulnerable regions (see section 2.5). Local decision-makers should take stock of cost-benefit analyses, economic valuations (see section 2.3) of local resources and other types of economic assessments to gather support from both public and private funds for investing in adaptation measures. Special attention should be given to soft and green measures⁷, including changes in land use.

⁷ Non-engineered terrestrial environment based measures

2.2.5 Combinations of policy instruments should be favoured

Combinations of policy instruments should be favoured to reinforce information-based instruments and offer strong incentives for policy integration of adaptation objectives (see also section 2.3)



Decision-makers at EU and national levels need to consider the full range of policy instruments and combine information-based instruments with stronger mandates for adaptation, such as requirements for national and local adaptation and strategies and plans with economic incentives to motivate and enable national and local adaptation efforts.



Local decision-makers should: (i) require that key local sector and cross-sector strategies and/or plans are subject to mandatory action coordinate their initiatives over geographical areas, and that the mandatory initiatives have the necessary resources and support offered by national level policy-makers and experts; and (ii) take advantage of local level adaptive capacity building through participatory initiatives (see section 2.5).

2.2.6 Integrate sustainable development goals in adaptation policy

Sustainable development goals should be integrated into climate adaptation policy to facilitate more equitable cross-sector integration



EU decision-makers could take advantage of synergies with other policy areas, especially with wider sustainable development objectives such as the UN SDGs and their interpretation at the EU level. This means taking social equality, cohesion and inclusion as well as benefits for green economies, into consideration from the outset.



National decision-makers could equally consider the links to social and distributive issues in relation to domestic sustainable development targets, the national implementation of international commitments such as the UN SDGs, as well as green economic development when formulating national adaptation strategies and policies. They should and develop systematic ways of integrating goals into decision-making on adaptation policy.



Local decision-makers should consider the impacts on social equality and distribution of climate change related when developing adaptation initiatives.

2.3 Adaptation policies should be supported by *ex ante* economic analysis for efficient short- and long-term adaptation decision making

The promotion and enhancement of the efficiency of adaptation policies is the key point in successful adaptation policy support across governance levels (EU, national, local) to ensure value for scarce and

limited public and private financial resources. Adaptation policies might be better incentivised if efforts are made to show the economic benefits of adaptation and the cost-effectiveness of adaptation measures – even in the light of data gaps and uncertainty. Economic evaluations of adaptation measures are important in terms of aiming for the improved effectiveness and efficiency of future adaptation actions, but also the economic evaluations should be integrated in a wider political discussion on the ‘lessons learnt’ from implemented adaptation actions.

2.3.1 Early use of *ex ante* assessments

***Ex ante* assessments should be used in adaptation policy development at the earliest stage of decision making to identify efficient actions**



The EC, particularly DG CLIMA, should: (i) continue to provide and draw on economic assessment data of climate change adaptation to support the Commission’s Impact Assessment Process; and (ii) facilitate the transfer of this database to national, as well as local governance levels.



National decision-makers should: (i) provide and collect relevant data from economic assessment to support their Impact Assessment processes; (ii) make this evidence base available to local and sectoral decision-makers; (iii) and provide adequate and timely support (expertise and finance) for sectoral and local levels to conduct economic analysis to support their adaptation decision making.



Local decision-makers should: (i) build capacity to use economic assessment in developing their adaptation policies and actions; (ii) search for economic models and approaches that can be calibrated with local parameters; and (iii) build on the approaches used and knowledge generated in other parts of Europe through accessing, for example, the Europe-wide Climate-ADAPT portal and similar national portals (see 2.4.2); and (iv) use BASE and other existing guidelines on conducting economic analysis to find efficient approaches, given resource constraints and local conditions.

2.3.2 Understanding cost-effectiveness through integrated economic assessments

Integrated economic assessments should be used and developed to provide deeper understanding of the economic cost-effectiveness of adaptation decisions at national and wider European level.



EU decision-makers should take stock of integrated models - such as the SARA Framework⁸ and the AD-WITCH⁹ model - to analyze the cost of adaptation at a European scale and to identify synergies and trade-offs with climate change mitigation. Integrated economic assessment should also include uncertainty analysis.



National decision-makers should use findings from integrated models (e.g. AD-WITCH) to develop more coherent and cost-effective national adaptation measures, and should demand that researchers commissioned to conduct models for policy development explicitly address uncertainty and data gaps in National Adaptation Strategies.

2.3.3 Use a mix of tailored *ex ante* assessment methods

Policy-makers should draw on a mix of tailored *ex ante* assessment methods to achieve balanced and nuanced decisions on specific adaptation measures to account for uncertainty, socio-ecological complexity and different perceptions of costs and benefits among stakeholder groups



For the EU, national and local levels, *ex ante* economic assessment methods to support decision on adaptation measures should be tailored to the specific decision situation by combining economic assessment methods such as cost-benefit analysis, cost-effectiveness analysis and multi-criteria analysis, with flexible planning approaches (e.g. Dynamic adaptation pathways) and participatory methods (e.g. scenario workshops) (also see section 2.4). This will strengthen the base for specific adaptation decisions, and will help to identify interactions between actions at different policy levels and the synergies among them. Preference should be given to assessment tools that can deal with a wide range of relevant evaluation criteria to allow stakeholders and decision-makers to reach balanced decisions. This also requires systematic analyses of uncertainties that affect the outcomes of the assessments, and requires an empowerment of decision-makers and stakeholders at the regional level to use the assessment results.



Ex ante appraisal at the EU, national and local governance levels should conduct uncertainty analysis to better map out the robustness of different policy options. The

⁸ The SARA framework was developed for BASE (deliverable 6.3) and integrates a collection of physical models in the context of the evolution of population, GDP, agricultural land use and other relevant socio-economic variables linked to climate change adaptation

⁹ The Ad-Witch model provides an integrated assessment of the impacts of climate change and adaptation policies on global and regional economic systems. Deliverable D6.3 of BASE advances the Ad-Witch model through detailed sectorial studies (Floods, Agriculture and Health) on damage, adaptation cost, and adaptation effectiveness



robustness of options¹⁰ can also be tested through scenario analysis and the analysis of adaptation pathways.¹¹ Uncertainty analysis should be incorporated in a number of different assessment types such as adaptation pathways and tipping-points, cost-benefit analysis, cost-effectiveness analysis.¹²



Multi-criteria analysis is a good approach to use at the local level as it can integrate traditional economic analysis (e.g. cost-benefit analysis), with a wider balance of non-economic criteria relevant to the local setting. Moreover, it can also integrate different perceptions of costs and benefits across different stakeholder groups, as revealed by participatory approaches (see section 2.4).

2.3.4 Take indirect effects of adaptation measures into account

Indirect effects¹³ of adaptation measures should be taken into account in assessing costs and benefits of adaptation and risk management for adaptation planning



At the EU level, organisations such as Eurostat, Insurance companies, and Civil Protection authorities need to develop and adopt methods, approaches and standards for assessing and monitoring indirect effects.



At the national level, consideration of climate impacts should capture indirect effects and should encourage higher investments in community adaptation strategies rather than individual actions. This would then provide an alternative way to allocate financial responsibility for interventions by incorporating the value of all stakeholders' economic capacities at the local/regional/national levels, especially when dealing with flood risks. Spreading the cost over major stakeholders (based on the 'who benefits, who pays' principle) may potentially reduce governments' financial burden for flood risk management.



At the local level, municipalities, NGOs and other local actors need to be empowered to recognize and report on indirect effects, thereby contributing to the information that can be used in comprehensive cost-benefit analyses (CBA) to support the business case for investing in adaptation measures. Local decision-makers should place more emphasis on uncovering indirect costs and benefits (which are particularly prevalent in urban areas) to

¹⁰ Robustness of an adaptation measure means that the measure is appropriate under a wide range of future impact scenarios and scenarios of socio-economic development

¹¹ BASE deliverables 6.3 and 6.4 outline these approaches

¹² Base deliverable 4.1, outlines some different approaches to uncertainty analysis (also see section 4.2 in the annex of this document)

¹³ E.g. business interruption, production losses in case of disasters, psychological effects on citizens

make sure they are included in the assessment of economics impacts.

2.3.5 Take co-benefits and low regret measures into account

Co-benefits and low regret¹⁴ measures should be identified and taken into account in adaptation decision making



Decision-makers working at the EU, National and local levels should use economic analysis to identify how combinations of measures can provide co-benefits that lead to more coherent, cost-effective and sustainable climate adaptation responses. Moreover, it is also efficient to for policy-makers to use these assessments to identify low regret measures that have low costs and high benefits.¹⁵

2.4 Knowledge use and learning in adaptation planning should be ensured through multiple means

In recent decades, we can observe the emergence of a broad range of applied research, think tanks and advisory bodies in the field of climate change adaptation. At the same time, policy-relevant information is split and fragmented across expert communities, policy sectors and levels of decision-making. Thus while the amount and quality of adaptation-relevant knowledge, information and data have been significantly improved for all sectors in recent years, the availability of knowledge does not always ensure its use in policy-making. Barriers that constrain knowledge use in support of policy making extend beyond the knowledge base itself, and relate to a wide range of factors, for example: how policy actors weigh-up and prioritise evidence, the skills required by policy-makers to process the complexity of scientific and technical information, the skills and will of researchers to produce useful information, the competition for funding, inadequate communication, and crowded decision agendas.

¹⁴ Low regret adaptation measures that provide wider benefits for society at relatively low cost and risks should be actively identified and adopted

¹⁵ E.g. in the health sector, the Heat Health Watch Warning System (HHWWS) is a low-regret measure that can provide high benefits – in terms of providing early warnings to public bodies, business and citizens allowing them to take appropriate action – with a small cost

2.4.1 Tailor knowledge, information, data and their dissemination to user needs

Knowledge, information and data on climate change and on adaptation, and their dissemination, should be tailored to the needs and capabilities of their intended users, and should promote co-production of information to tap into local knowledge.



EU decision-makers should strengthen and provide resources for knowledge exchange between scientists and policy-makers to facilitate strategic planning and policy-making.



National decision-makers should facilitate knowledge brokerage and production that disseminates and transforms scientific knowledge so that it can be adopted and implemented in specific measures to meet decision-maker needs at the local level.



Local decision-makers should encourage participatory decision-making where stakeholders, local officials, scientists, and citizens develop locally relevant knowledge, tailored solutions, and effective dissemination of adaptation initiatives (see section 2.5).

2.4.2 Enhance visibility and usability of Climate-ADAPT

The visibility and usability of the European Climate Adaptation Platform (Climate-ADAPT) should be enhanced and the connection to national adaptation portals and platforms should be strengthened.



DG CLIMA and the European Environment Agency should improve the visibility and usability of Climate-ADAPT for the end-users through translation into all European languages and through improving the graphic-user-interface to make it more user-friendly, action-oriented, and specific for different user groups. Specifically, there is a need for the portal to support ways to access adaptation financing via information about European, national and other funding sources. To ensure knowledge brokerage the portal should be more actively used to foster an active user community that can be brought together not only to disseminate information but also to co-create adaptation solutions. The portal could be used more actively to strengthen links with and between national portals, facilitating person-to-person meetings, and host webinars.



Member state governments should provide regular updates of the information that is published on their climate-ADAPT country profiles.

2.4.3 Encourage policy learning through sectoral mechanisms

Policy learning¹⁶ should be encouraged through the development of sectoral mechanisms that monitor progress in climate adaptation



To complement DG CLIMA's commitment to an overall monitoring of the EU Adaptation Strategy, pertinent sectoral DGs should develop sectoral mechanisms to monitor progress in the integration of climate adaptation in other areas of EU policy making. Where sectoral monitoring mechanisms are available, priority should be placed on adjusting these existing provisions to provide essential information on adaptation to climate change.



National decision-makers should seek opportunities to initiate sectoral monitoring mechanisms in their countries to evaluate the effectiveness of adaptation policies. Decision-makers should use this knowledge to improve implementation and policy development.



At the local level decision-makers should make use of sectoral monitoring and evaluation results on local policy making and promote the use of such knowledge among key sectoral actors.

2.4.4 Include criteria and monitoring for funding adaptation actions in EU funding mechanisms

Specific criteria and monitoring for funding of adaptation action should be included in EU funding mechanisms



The EC needs to complement the funding targets for adaptation actions in EU funding instruments with clear operational funding criteria and mechanisms for monitoring progress towards these targets. Requirements for the *ex-post* evaluation of action should be explicit in adaptation funding calls and applications, and spending that contributes to advancing adaptation should be regularly monitored in all EU mechanisms with check-points during the course of funding periods. *Ex-post* evaluations should then be used to identify and communicate adaptation success stories.



National decision-makers should set targets for evaluating progress on CCA in national spending priorities and ensure awareness among stakeholders involved in funding applications, including project proponents. *Ex-post* evaluations can then be used by national governments to identify and communicate good practice among local actors.

¹⁶ Policy learning is understood as a systematic process through which past experiences from the implementation of policies are used to improve and modify future policies



Local decision-makers need to promote awareness of funding targets among project proponents and should evaluate how spending is contributing to climate change adaptation goals.

2.4.5 Specific evaluation criteria promote learning on adaptation policy design and progress

Specific evaluation criteria such as the BASE ‘BECCA’ should be used by policy-makers to learn about adaptation policy design and progress



Decision-makers at the EU, national and local levels of governance should use specific criteria to guide learning about: i) strength and weaknesses of their adaptation processes; and ii) the actual adaptation outcomes and the merit and worth of the adaptation action in relation to observed or projected climate change. As climate adaptation is highly context-specific, there is no one-size-fits-all set of criteria for evaluating climate actions. The BASE BECCA provides advice on which criteria to use in different adaptation situations so that decision-makers can tailor their own set of evaluation criteria to the context of their decision making.

2.5 Public participation should play a central role in designing and implementing adaptation measures

There is an increasing emphasis on participation in all policy development including CCA. Efforts to develop participation frame publics not as passive recipients of expert knowledge, but as important actors shaping policies and their trajectories. This leads to a justification of public participation in at least three ways. One line of argument is normative, holding that governance without meaningful public participation is not sufficiently democratic. Citizens, the argument goes, should have a powerful voice in determining whether and how a policy should affect their lives, and stakeholder groups should have a say when their interests are at stake. A second justification is substantive and focuses on the quality of policies and solutions. Non-experts will often identify issues, risks and solutions missed by experts. In addition, incorporating diverse perspectives will strengthen the relevance of knowledge produced and the utility of technologies and governance. Finally, public participation may increase the perceived legitimacy of a policy, enhancing trust between researchers, policy-makers and lay publics, and thus the likeliness of successful implementation of decisions made. Whichever argument is applied, the aim is to ensure that participation is real, rather than perfunctory.

2.5.1 Decisions on adaptation issues is a political exercise

Decisions about climate change adaptation should be seen more as a political exercise than a technical one



Decisions about CCA should be approached as a political and vision building exercise requiring participation of a broad segment of stakeholders. EU decision-makers, in particular DG Clima, should acknowledge that adaptation to climate change is a highly political process with different interests, and therefore not merely a technical one. Thus, more public participation and involvement of a wider range of stakeholders and citizens are required, especially in local adaptation processes. Consequently, current EC “Guidelines on developing adaptation strategies” should be revised to make public participation an integrated part of Step 2 (assessing risks and vulnerabilities), Step 3 (identifying adaptation options), and Step 4 (assessing adaptation options). The current guidelines do not encourage member states to engage stakeholders before Step 5 (Implementation) in order to seek agreements on implementing decisions.



DG Clima should continue to explore the connection between adaptation, public participation and visions for the future: Rather than framing adaptation solely as a defensive response to a threat, more emphasis should be put on framing it as an opportunity to steer the development of one’s community in a desirable direction to help mobilize community enthusiasm and support.



National decision-makers should increase the emphasis on public participation and seek to encourage a public discussion of what is at stake for different societal groups for different adaptation measures. They should encourage local and subnational authorities to include societal actors even with small, but legitimate, stakes in adaptation planning.



Local decision-makers should avoid leaving decisions about adaptation options and measures to their technical administration and consulting engineers. Instead, local administrations, stakeholders and citizens should be involved in the early stages of identifying, assessing and designing alternative adaptation measures, and discussions about how to adapt should be linked to discussions about and visions for the kind of community people wish to see in the future. Local decision-makers should demand knowledge providers (including technical staff in local governments) inform and support deliberative processes rather than making their own conclusions about what is the best technical solution.

2.5.2 Promote public participation in climate change adaptation

Public participation in climate change adaptation should be promoted in a way that serves to improve the knowledge base, the shared understanding of the challenge, the ownership and cost-effectiveness of chosen measures, and the public acceptance of and commitment to chosen solutions



EU policy-makers should seek to shape adaptation policies in such a way that they promote and support the potential positive consequences of public participation. DG CLIMA should encourage Member States to do the same. Making EC adaptation funding conditional on active strategies for public participation or offering extra funding for proposals that include these strategies would be beneficial, both for LIFE, ESI, and H2020 projects.



National policy-makers should be more proactive in order to assist local governments in making strategies for public participation in climate adaptation. They could develop and

fund platforms for sharing experiences and methods for good participation.



Local policy and decision-makers should both make participation strategies part of their adaptation plans and part of their efforts to develop those plans. When initiating a discussion about alternative adaptation measures, they should do so in the context of a broader debate about the future of the local community.

2.5.3 Allocate choice of participatory methods equal attention to that of economic models

The choice and use of participatory methods should receive the same attention as the choice and use of economic models



EU decision-makers, in particular DG CLIMA, should expand their current understanding and practice of public participation. New participatory methods, such as cross-European citizen participation, should be considered as a supplement to stakeholder consultations. Since there is no one-size-fits-all when it comes to climate adaptation, either for public participation, or for cost-benefit assessments, a flexible approach is needed. The EC could also consider a more systematic approach to making the description of different participatory methods, such as scenario workshops and citizen summits, available for initiators of climate adaptation as well as to offering guidelines for choosing a suitable method in a given situation. Such guidelines would be a welcome addition to Climate-ADAPT.



National policy-makers should support the training of public officials at different governance levels in participatory methods and seek to enhance the general understanding of when and how which methods should be used for what purpose.



Local decision-makers should either seek to recruit staff with the necessary public participation expertise or educate existing staff in understanding and making use of the different methods.

2.6 A clear distribution of responsibility for adaptation action should be established and consider the relationship between state and non-state actors and levels of governance

In several Member States, the need for adaptation challenges existing divisions of responsibilities between the local, (in some countries) regional, and state governance levels and different societal actors, from private citizens to, non-governmental organisations, water utilities and big private enterprises. The lack of a clear division of responsibilities can lead to controversies, delayed adaptation efforts, or misguided action. One of the key conditions for speeding up adaptation action is therefore to clarify the distribution of responsibilities, which clearly differ substantially from country to country. It is also important to identify suitable financial mechanisms, given the fact that they will have to be tailored to fit different responsibility structures. Crucially, the involvement of non-state actors, including those from all relevant sectors, may contribute to a deeper integration of policy concerns and a broader commitment

to the implementation of adaptation measures (see section 2.5), but this also raises questions about democratic accountability if public mandates are delegated.

2.6.1 Adopt and implement adaptation measures at the suitable level of decision-making

In accordance with the EU subsidiarity principle, adaptation measures should be adopted and implemented at the level of decision-making best suited for this purpose in each particular instance.



EU decision-makers should include targets for adaptation in the directives of relevant sectors (i.e. health, agriculture, water). The EC needs to ensure that funding for adaptation through cohesion funds trickles down to local level actors to help them fund their adaptation activities. It should also encourage Member States to address the distribution of responsibilities in their national adaptation strategies and include strategies for assigning such responsibilities where there is a lack of clarity.



National decision-makers should: (i) place climate adaptation on the agendas of local and regional governments and policy sectors; and (ii) take lead in clarifying the distribution of responsibilities between different national governance levels and societal actors for initiating, making decisions about, and implementing CCA measures.



Local decision-makers should: (i) engage in active dialogues with national governments and the EU to help foster local and regional ownership of climate adaptation; and, (ii) pursue CCA activities, which are by nature local as climate change impacts vary across geographic locations.

2.6.2 Address coherence to enhance synergies between state- and non-state measures

To enhance synergies between state- and non-state measures, and thus policy integration, adaptation planning should address the question of coherence between the key choices made by the public sector and those made by non-state actors.



The EC should continue to engage with non-state actors – non-governmental organisations, businesses and other stakeholders – and encourage them to be involved in developing adaptation policies (see section 2.5). In so doing, it needs to ensure that the EU adaptation strategy encourages initiatives and flexibility at the local level to allow for incremental and adaptive, bottom-up approaches to be taken, involving a variety of non-state actors. The EC should showcase benefits and co-benefits of climate change adaptation to present the business case for action and participation.



National decision-makers need to actively support local authorities to work with non-state actors. National Adaptation Strategies should be geared towards helping government and non-government actors to meet their local needs and context specific requirements, rather than prescribing top-down actions. It is important to conduct rigorous assessments of how

non-state actors (including, citizens, civil society and business) contribute to the adaptation planning processes. These assessments are instrumental for demonstrating (and provide compelling evidence of) co-benefits of state and non-state actor cooperation and can contribute to motivating future actions.



Local decision-makers should pursue partnerships with non-state organizations and citizens through the provision of information appropriate to particular non-government target groups and the pursuit of participatory approaches to better coordinate public and private activities. Close attention should be paid to coordinating action between public authorities and emergent network movements of grassroots communities across the Europe, such as Citizen Science or Transition Towns initiatives, which may be fostering autonomous adaptation projects that involve a wide range of private actors. Regardless of the national distribution of responsibilities, there is not enough public funding to implement the adaptation measures needed. Local governments should therefore step up initiatives to encourage private funding for adaptation measures. If public responsibilities are delegated to private actors, they have to be transformed in a coordinated, transparent and accountable way and be regulated by public authorities.

3 Conclusions

This document has set out policy guidance in the form of recommendations for CCA decision-making in Europe based on the findings and analysis of the BASE project. An important overall empirical finding from BASE is that CCA planning is context-specific across countries, regions, local areas and sectors. Thus, the recommendations do not follow a one-size-fits-all approach. Instead, they provide more general suggestions to European decision-makers working at different governance levels on different policy issues, approaches, institutional arrangements, policy instruments and decision support tools. They aim at more efficient and coherent adaptation decision-making, and between emergent synergies between bottom-up and top-down CCA policies and actions. In this context, the analysis identified the following key policy lessons that a targeted application of the recommendations can address:

- Since resources are often scarce, adaptation planning should systematically search for measures that provide co-benefits to ensure that CCA is undertaken timely and in an effective (i.e. measures are effective in decreasing vulnerabilities and risks) and sustainable (i.e. adaptation measures ensure well adapted societies for present and future generations) way. Local actions are crucial in this respect, and by facilitating and encouraging the sharing of innovative local solutions, national governments and the EU can advance adaptation more than through central planning only.
- CCA requires a broad knowledge base (e.g. climate models, climate and socio-economic scenarios) that responds to requests of local decision-makers. Climate scenarios should be easily understood, usable and applicable by local practitioners and decision-makers. However, all actors need a basic awareness of climate change and factors affecting vulnerability. This requires informed public discussions and political debates on the topic.
- As climate change is a complex problem, there is not a one-size-fits-all toolbox. Integrated solutions need to be developed reflecting also contextual local conditions. BASE case studies show CCA benefits from the use of different and complementary sources of information (from economic model analysis to stakeholder approaches) and expertise (e.g. scientific, administrative, lay).
- There is still an untapped potential in stakeholders. Participatory experiences in BASE cases studies show that CCA concerns political choices and is not only a matter of finding the "right" technical solutions. Participation allows for a higher level of social inclusion, better outcomes and conflict resolution, and should thus be a key feature of CCA decision-making processes.
- There is still a gap between CCA decisions and their implementation. Most actions taken have not been driven by policies. In many cases, adaptation actions result from local vulnerability and risk perceptions triggering local initiatives.
- Recognising and dealing with trade-offs between different sectors and levels of governance are central for implementing solutions advancing adaptation to climate change. It is crucial to clearly set responsibilities among different levels of government and state and non-state (non-governmental organisations, business, citizens) actors.
- Research should be collaborative at multiple levels: multidisciplinary (i.e. different scientific disciplines provide complementary knowledge), interdisciplinary (knowledge based on diverse scientific disciplines), and transdisciplinary (knowledge results from different systems of knowledge).

4 ANNEX Supporting evidence

4.1 Theme 1: Policy design should foster integration of adaptation and ensure coherence

4.1.1 List of recommendations

1. Climate change adaptation objectives should be systematically integrated into policies, plans or programs at different governance levels and across different sectors to advance policy coherence
2. Policy coordination for more integrated policies on climate change adaptation should be supported by strong and sustained high-level leadership
3. Decision-makers should explicitly consider how specific measures affect adaptation in other sectors and locations, including across borders
4. Innovative adaptation solutions that offer co-benefits are often developed at the local level, and they should be facilitated and supported by EU and national policy frameworks and financial mechanisms
5. Combinations of policy instruments should be favoured, to reinforce information-based instruments and offer strong incentives for policy integration of adaptation objectives
6. The United Nations Sustainable Development Goals should be integrated into climate change adaptation policy adaptation to facilitate more equitable cross-sector integration

4.1.2 Insights behind recommendations

Recommendation 1: Climate change adaptation objectives should be systematically integrated into policies plans or programs at different governance levels and across different sectors to advance policy coherence

The integration of CCA into EU policies cannot be advanced by a one-size-fits-all approach. This is primarily due to the diverse nature and scope of the different EU policies. EU agricultural and cohesion policies, for instance, are distributive in allocating funds to regions and farmers, while flood risk and water management policies are rather regulatory in setting rules and standards, and urban policies often rely on co-benefits such as regeneration of deprived neighbourhoods.

In general policy coherence requires both a more effective and explicit integration of CCA objectives into other policies, plans and programs at different levels of governance (vertical integration), as well as a more consistent process to develop projects aiming at addressing CCA and sector-specific purposes (cross-sectoral coherence) (D2.1, D2.2, 7.2). Thus, adaptation policy actions should be formally integrated into or coordinated with other key policies such as climate change mitigation, economic strategies, agricultural funds or urban development strategies including the built environment and the recreation of natural areas. A significant additional aspect of such action is the early integration of conflict management procedures that can manage potential conflicts within and across sectors which in the longer-term, may otherwise limit opportunities for timely and cost-efficient CCA actions, and may even foster mal-adaptation (D2.2)

Multi- and cross-sectoral policy integration is included as a guiding principle in many National Adaptation Strategies (D2.2). According to earlier studies, inclusion, consistency, weighting and reporting are key aspects for implementing climate policy integration (Hanger et al 2015). These, however, are not specifically or directly addressed yet. Evidence indicates that while there is inclusion and some consideration of consistency, this is primarily considered from the point of view of bringing about synergies and avoiding the large costs of non-adaptation. Yet, at the same time conflicts are rarely identified in National Adaptation Strategies (D2.2). In this sense, while signaling a commitment, most National Adaptation Strategies do not represent a very strong mandate to back up adaptation or demand that the integration of adaptation issues in other sectors and at other levels of policy making.

Recommendation 2: Policy coordination for more integrated policies on climate change adaptation should be supported by strong and sustained high-level leadership

Many adaptation strategies appear disconnected from other administrative processes (D2.2, D7.2). Indeed, apart from official policy appraisal mechanisms and consultation processes that might include adaptation impacts, the adaptation strategies and plans appear to operate in isolation from wider initiatives. Adaptation policy could be integrated into instruments such as appraisal procedures, evaluation, policy, coordination fora and public consultation. Failing to address integration in public administrative processes may lead to adaptation being seen as an add-on rather than as an integrated part of the decision-making process. Furthermore, in some cases, adaptation strategies run in parallel with sustainable development strategies. While this could be an asset in support of sustainable adaptation, it runs a two-fold coordination risk: first the risk of duplication of efforts where resources are being marshaled by parallel rather than integrated processes; and second that adaptation actions may be steered in a direction other than wider sustainability goals, and e.g. produce increased social inequality or slow down climate change mitigation policy actions.

The long-term outlook suggests significant risks and potential for adaptation that crosses sectors, potentially creating cross-sector tensions and conflicts and limiting opportunities for identifying useful policy synergies. This means in practice that it is rational to introduce coordinated discussions on long-term strategies and actions at an early stage of national decision cycles, even if the current need for coordinated action is modest. Failure to do so means that there are fewer opportunities for identifying policy conflicts and synergies, which risks policy failure with the associated dangers and costs of non and mal-adaptation (D2.2).

BASE case studies as well as academic literature on policy integration and coordination suggests that sustained attention to the issue from high-level leaders signals the importance of the issue and is therefore more likely to ensure integration of CCA into other policy processes (D.5.4).

Evidence from Coastal Sector

All but one coastal case studies in BASE were at early stages of the adaptation cycle (i.e. vulnerability assessments, planning) and had not advanced into the phase of policy implementation yet. One exception benefited from both private and public funding. Coastal protection measures were in most cases contemplating grey measures (e.g. dikes, breakwaters), which can be very expensive. In deliverables 5.4 and 5.5 coastal case studies are described and evidence is provided on progress made on adaptation. In chapter 4 of D5.5 where the stakeholder perspectives are provided and analyzed, financing adaptation is pointed out as a key issue for decision-makers.

Recommendation 3: Decision-makers should explicitly consider how specific measures affect adaptation in other sectors and locations including across borders

CCA measures are largely implemented at the local level and thus local decision-makers make a large number of decisions that directly or indirectly affect adaptation action in neighboring localities (D5.5). Likewise, adaptation actions in one sector such as agriculture could positively or negatively impact on urban areas. This is in part due to the complexity that characterizes social-ecological systems, especially the incomplete overlap between socio-economic and political-administrative decision-making systems and ecological systems and scales. This can lead to secondary or spillover effects from adaptation actions taken at one level or one location on other locations and actors. For instance, adaptation in coastal areas would be affected by adaptation action taken or implemented upstream or by actors in multiple sectors. These could be both positive secondary effects, providing climate adaptation benefits, or negative effects.

Adaptation is linked, in one way or the other, to multiple governance levels from local to global and *vice versa*, and thus with all the complex and multidirectional interactions among them. Consequently, learning between different levels and across jurisdictional boundaries is crucial. Learning might be helped by increased opportunities to share information on adaptation activities (D2.2), which ultimately helps to a) recognize interactions and secondary effects, and b) ensure that action is taken where it is needed and supported by the right government levels as well as other actors. Systematic monitoring efforts of adaptation measures and the exchange of best practices including that by private actors may contribute to policy learning and motivate action over time. National authorities can ensure this sharing by strengthening existing forums creating new ones for dialogues between groups. Care should be taken that sufficient resources are used on planning and managing the forums. They should bring together different actors and allow for reflection on relevant research findings. Cross-border forums are particularly important but also demanding as they may require the bridging of cultural, administrative and language barriers. Existing and emerging cross border forums should be actively supported by European and national resources. The forums for sharing and exchanging experiences of enablers and constraints that adaptation planning processes face provide a base for innovative learning. Networks and forums support institutional dialogues that improve integration and policy coherence.

Recommendation 4: Innovative adaptation solutions that offer co-benefits are often developed at the local level, and they should be facilitated and supported by EU and national policy frameworks and financial mechanisms

In a number of countries, the implementation of a National Adaptation Strategy often includes private actors and necessitates the coordination of state and non-state actions (D.2.2). However, in practice many non-state actors are involved in implementing adaptation measures as well as developing innovative responses to concrete and local-specific adaptation challenges (D2.2). Moreover, given the scope of adaptive actions required, many state actors favour the co-sharing of responsibility with non-state actors. The involvement of private actors and collaboration between state and non-state actors and co-responsibility for adaptation policy within sectors can pave the way for a deeper integration of policy concerns and for a broader commitment to adaptation measures, and also novel and innovative solutions to adaptation. Many such innovative and co-creative adaptation solutions develop at the local level.

Differences exist among the countries in the vertical diffusion of adaptation policy across two or more policy levels (from local government to the EU level). The national strategies have generally recognized the role and importance of the local level and encouraged local adaptation, but policy instruments for achieving this are generally weak. A lack of coordinated action is stressed as a barrier for adaptation,

indicating difficulties in providing overall and robust climate impact and risk assessment as a basis for local adaptation actions. Only a very limited number of countries have included an explicit obligation to develop plans at the local level. Paying more attention to clear and explicit mandatory actions and obligations may promote implementation of adaptation policy – as well as removing obstacles for integrated and innovative solutions to emerge at the local level.

Evidence from the Agricultural sector

Integration of CCA objectives into sectoral activities depends significantly on actions by private actors, such as farmers or private water utilities. BASE case studies from the agricultural sector show that mainstreaming of climate adaptation is often best implemented at the local level, where actors develop innovative adaptation measures that offer co-benefits (D5.4, D5.5). For example, farmers serving as water managers for urban areas (in Holstebro case, Denmark) or fighting desertification through soil management, water retention measures in the landscape, and permaculture solutions (Tamera ecovillage and Aldeia das Amoreiras in Alentejo, Portugal). Such bottom-up initiatives raise new challenges for policy integration. The local initiatives may, however, not be coherent with the funding rules of the common agricultural policy thus requiring alternative sources of funding or increased flexibility and public accountability of the application of rules. For instance, the Holstebro case study found that farmers were concerned that entering into a contract under which they would allow occasional flooding of their land to prevent urban flooding might conflict with the CAP requirement that land is in production to be eligible for funding or that they might somehow get into trouble with cross compliance rules. Likewise, the Tamera ecovillage case study found rural development programs were not flexible enough to incorporate local practices against land degradation and drought.

Evidence from the Water management sector

BASE research shows that different types of measures - grey, green, or blue infrastructures or soft measures – offer different risk reduction advantages at different geographical and temporal scales. For instance, adapted buildings can significantly reduce flood risks especially in urban areas (BASE Flood model), but the reinforcement of dikes can be a more cost-effective measure when looking at regional or even macro-regional planning (D6.3). Yet again, natural water retention measures may offer multiple benefits, reducing climate change impacts on both biodiversity and physical infrastructure. It is therefore important that decision-makers working in the sectors and/or at local/regional level consider how combinations of measures can provide co-benefits that lead to more coherent, cost-effective and sustainable climate adaptation responses. Analyzing combinations of measures is also important to ensure coherence across responses where climate change impacts are inter-connected, as in the case of flooding and erosion.

Evidence from Coastal Sector

All but one coastal case studies in BASE were at early stages of the adaptation cycle (i.e. vulnerability assessments, planning) and had not advanced into the phase of policy implementation yet. One exception benefited from both private and public funding. Coastal protection measures were in most cases contemplating grey measures (e.g. dikes, breakwaters), which can be very expensive. In deliverables 5.4 and 5.5 coastal case studies are described and evidence is provided on progress made on adaptation. In chapter 4 of D5.5 where the stakeholder perspectives are provided and analyzed, financing adaptation is pointed out as a key issue for decision-makers.

Recommendation 5: Combinations of policy instruments should be favoured that reinforce information-based instruments and offer strong mandates and incentives for policy integration of adaptation objectives

While all the National Adaptation Strategies examined in BASE recognize adaptation as a cross-sectoral policy issue, only a few of them include strong policy instruments to ensure that CCA objectives are integrated throughout sectoral policies. The national strategies analyzed call primarily for information based instruments that raise awareness, push detailed data production, share experience-based information and encourage coordination across sectors. Thus, targeted research and access to information and data are promoted strategically to not only foster action but also maintain a shared understanding of climate impacts and the challenges they imply. Policy instruments should combine awareness raising information, information about adaptation options with instruments such as mandatory plans or sectoral actions that can integrate adaptation knowledge in policy issues and actions in other sectors and at other levels of policy making alongside the use of economic incentives to motivate and enable adaptation actions at the local level.

Recommendation 6: The UN Sustainable Development Goals should be integrated into climate change adaptation policy to facilitate more equitable cross-sector integration

Framing adaptation policy objectives within a sustainability perspective suggests that adaptation policies are – or could be – consistent with other development policies, and that this would provide an opportunity to explore synergies and co-benefits. In current national adaptation strategies consistency with policy issues and priority areas other than adaptation policy is addressed more *ad hoc manner*, but examining synergies with a range of policy areas at the same time potentially promotes adaptation issues (D2.2). This includes also considering the link to social sustainability (including social coherence, inclusion and equality and economic sustainability pressing for greener and cleaner economies) within climate mitigation horizons, e.g. in post-carbon transition perspectives.

4.1.3 References

- D2.1 (BASE Deliverable 2.1) - Policy integration and knowledge use in the EU adaptation strategy
http://base-adaptation.eu/sites/default/files/Deliverable_2_1.pdf
- D2.2 (BASE Deliverable 2.2) - Knowledge use, knowledge needs and policy integration in Member States
<http://base-adaptation.eu/knowledge-use-knowledge-needs-and-policy-integration-member-states>
- D5.4 (BASE Deliverable 5.4) - Implementation of climate change adaptation: Barriers and Opportunities to adaptation in case studies
<http://base-adaptation.eu/implementation-climate-change-adaptation-barriers-and-opportunities-adaptation-case-studies-1>
- D5.5 (BASE Deliverable 5.5) - Adapting to Climate Change: Comparison of Case Studies

<http://base-adaptation.eu/adapting-climate-change-comparison-case-studies>

- D6.3 (BASE Deliverable 6.3) - EU-wide economic evaluation of adaptation to Climate change
http://base-adaptation.eu/sites/default/files/D.6.3_final.pdf
- D7.2 (BASE Deliverable 7.3) - Synthesis of integrated climate policy perspectives
<http://base-adaptation.eu/synthesis-integrated-climate-policy-perspectives>
- Hanger, S., Haug, C., Lung, T., & Bouwer, L. M. (2015). Mainstreaming climate change in regional development policy in Europe: five insights from the 2007–2013 programming period. *Regional Environmental Change*, 15(6), 973-985.

4.2 Theme 2: Adaptation policies should be supported by *ex ante* economic analysis for efficient short- and long-term adaptation decision-making

4.2.1 List of recommendations

1. *Ex ante* decision support tools should be used in adaptation policy development at the earliest stage of decision making to foster coordinated and efficient actions
2. Integrated economic assessments should be used and developed to provide deeper understanding of the economic cost-effectiveness of adaptation decisions at national and wider European level
3. Policy-makers should draw on a mix of tailored *ex ante* assessment methods to achieve balanced and nuanced decision on specific adaptation measures to account for uncertainty, socio-ecological complexity and different perceptions of costs and benefits among stakeholder groups
4. Indirect effects of adaptation measures should be taken into account in assessing costs and benefits of adaptation and risk management for adaptation planning
5. Co-benefits and low regrets measures and should be identified and taken into account in adaptation decision making

4.2.2 Insights behind recommendations

Recommendation 1: *Ex ante* decision support tools should be used in adaptation policy development at the earliest stage of decision making to foster coordinated and efficient actions

Evaluations of adaptation measures are context specific. The choice of an appropriate method for adaptation evaluation depends on several factors, namely the objective of the evaluation and required level of detail, number and type of evaluation criteria, and data availability (D4.1). For feasibility studies on a strategic level simple multi-criteria analysis (MCA), cost-benefit analysis (CBA) or cost-effectiveness analysis (CEA) are appropriate. For detailed investment decisions, detailed CBA, preferably in combination with participatory MCA or participatory CBA, is advised. For decisions with one target criterion, CEA might be sufficient, but preferably use a comprehensive CBA or MCA.

Recommendation 2: Integrated assessments should be used and developed to provide deeper understanding of the cost-effectiveness of adaptation decisions at national and wider European level.

Climate adaptation interventions can have economy wide impacts at the national and European level. Integrated assessments using macro-economic models represent a suitable way of analysing the cost-effectiveness of adaptation strategies at the EU and national level, and can help identify synergies and trade-offs with mitigation. Integrated assessments broadly combine both physical and social science models to consider environmental, demographic, political, and economic variables, examples of which include the Ad-Witch model and the SARA framework (developed for BASE – see D6.3). In D3.4 the concept of risk premium is presented so as to account for risk aversion in the affected population. The model is simple and able to reflect public attitudes risk and uncertainty in a transparent way. The combination of modelling approach (e.g. sectoral and integrated assessment models) with case study insights supports comprehensive and consistent analysis of adaptation needs as well as costs (D3.3). (D6.3).

Recommendation 3: Policy-makers should draw on a mix of tailored *ex ante* assessment methods to achieve balanced and nuanced decisions on specific adaptation measures to account for uncertainty, socio-ecological complexity and different perceptions of costs and benefits among stakeholder groups

Uncertainties related to various aspects (climate, technical and socio-economic) should be considered in the evaluation process. Methods that support uncertainty analysis, and decision-making on complex issues (e.g. Adaptation Pathways and Tipping-Points, cost-benefit analysis, cost-effectiveness analysis), combined with participatory methods (e.g. Scenario Workshops) can help identify, the efficiency of policy, interactions between different policy levels and establish synergies among them. BASE research show how perceptions of the costs and benefits of adaptation can vary between stakeholder groups (BASE D5.3), and that these differences often manifest at the local level and can cause conflict making the implementation of measures more difficult. Multi-criteria analysis is therefore a good approach to use at the local level as it can integrate traditional economic analysis (e.g. cost-benefit analysis) with differencing perceptions of the costs, benefits and uncertainty across different stakeholder groups and wider balance of non-economic criteria relevant to the local setting (see BASE 4.1). In the Annex of BASE 4.1, guidance is provided on conducting uncertainty analysis in economic assessment. In BASE D5.2, sec. 1.1, an overview is provided on the available guidance documents for *ex ante* assessment for different adaptation levels and sectors. Annex 1 of BASE D5.2 provides guidance for adaptation evaluation specifically at the local level.

Recommendation 4: Indirect effects of adaptation measures should be taken into account in assessing costs and benefits of adaptation and risk management for adaptation planning

Information should be collected for the evaluation not only of the direct but also of the indirect damages resulting from extreme events (D3.1). A significant part of the costs arising from climate change are of an indirect nature, especially in urban areas, (e.g. business interruption, production losses in case of disasters, psychological effects on citizens), which makes them “invisible”. Thus, they are frequently overlooked in evaluations of costs and benefits of adaptation options. It is therefore vital that effective investment in, for example flood risk management and adaptation, includes the analyses of these indirect effects (D6.3). The indirect effects are needed to deliver a full CBA of adaptation measures and to correctly estimate the business case of adaptation measures (D6.3).

Recommendation 5: Co-benefits and low regret measures and should be identified and taken into account in adaptation decision making

It is important that the business case for climate change adaptation is made to encourage engagement and investment, especially though highlighting co-benefits and low regret measures. BASE research identifies a number of low regret measures which would represent some of the most efficient adaptation responses as they provide wider benefits for society at relatively low cost and risk (D6.3). For example in the health sector, the Heat Health Watch Warning System (HHWWS) is a low-regret measure that can provide high benefits - in terms of providing early warnings to public bodies, business and citizens allowing them to take appropriate action - with a small cost as this measure may provide a timely and accurate specification of the threshold temperature associated with risks from excessive heat for public authorities, business and citizens.

BASE research also shows that different types of measures – grey (built), green (terrestrial environments), or blue (aquatic environments) infrastructures or soft measures - offer different risk reduction advantages at different geographical and temporal scales. For instance, adapted buildings can significantly reduce flood risks especially in urban areas (BASE Flood model), but the reinforcement of dikes can be a more cost-effective measure when looking at regional or even macro-regional planning. Moreover, natural water retention measures (NWRM) may offer multiple benefits, reducing climate change impacts on both biodiversity and physical infrastructure. It is therefore important that decision-makers working in the sectors and/or at local/regional level consider how combinations of measures can provide co-benefits that lead to more coherent, cost-effective and sustainable climate adaptation responses. Analysing combinations of measures is also important to ensure coherence across responses especially where climate change impacts are inter-connected, as in the case of flooding and erosion.

4.2.3 References

- D3.1 (BASE Deliverable 3.1) - Model catalogue and data exchange plan
<http://base-adaptation.eu/model-catalogue-and-data-exchange-plan>
- D3.3 (BASE Deliverable 3.3) - Selected integrated assessment models for top-down analysis
<http://base-adaptation.eu/selected-integrated-assessment-models-top-down-analysis>
- D3.4 (BASE Deliverable 3.4) - Uncertainty analysis in integrated assessment modelling
<http://base-adaptation.eu/uncertainty-analysis-integrated-assessment-modelling>
- D4.1 (BASE Deliverable 4.1) - BASE common case study approach
<http://base-adaptation.eu/base-common-case-study-approach>
- D4.2 (BASE Deliverable 4.2) - Experiences in bottom-up adaptation approaches in Europe and beyond
<http://base-adaptation.eu/experiences-bottom-adaptation-approaches-europe-and-beyond>
- D5.2 (BASE Deliverable 5.2) - Economic evaluation of adaptation options
<http://base-adaptation.eu/scientific-report-economic-evaluation-adaptation-options>
- D5.3 (BASE Deliverable 5.3) - Participation in climate change adaptation
<http://base-adaptation.eu/participation-climate-change-adaptation>
- D6.3 (BASE Deliverable 6.3) - EU- wide economic evaluation of adaptation to Climate change
http://base-adaptation.eu/sites/default/files/D.6.3_final.pdf

4.3 Theme 3: Knowledge use and learning in adaptation planning should be ensured through multiple means

4.3.1 List of recommendations

1. Knowledge, information and data on climate change impacts and adaptation, and its dissemination should be tailored to the needs and capacities of their intended users, and should promote the co-production of knowledge
2. The visibility and usability of the European Climate Adaptation Platform (Climate-ADAPT) should be enhanced and the connection to national adaptation portals and platforms should be strengthened
3. Policy learning¹⁷ should be encouraged through the development of sectoral mechanisms that monitor progress in climate adaptation
4. Specific criteria and monitoring for funding of adaptation action should be included in EU funding mechanisms
5. Specific evaluation criteria such as the BASE 'BECCA' should be used by policy-makers to learn about adaptation policy design and progress

4.3.2 Insights behind recommendations

Recommendation 1: Knowledge, information and data on climate change and adaptation, and its dissemination should be tailored to the needs and capacities of their intended users, and should promote the co-production of knowledge

In order to facilitate and support knowledge use in adaptation decision making, it is important to ensure that the produced knowledge, information and data are tailored to the needs and capacities of the intended users. Knowledge use is more likely to take place when the knowledge is perceived as relevant, salient and usable, especially at the local level. Attention should be given in order to ensure that the knowledge, information and data are easily accessible and comprehensible, considering mainly the format and the language in which they are presented. For example, BASE evidence suggests that the limited use of scientific jargon, the use of info-graphics and the development of policy briefs and summaries of strengths, weaknesses, opportunities and threats tend to be well received by policy actors (D2.2).

It is important that all scientific knowledge becomes freely available to policy actors and all other interested stakeholders (D5.3). This is especially the case for local governments and actors working at the sectoral level who usually have limited annual budgets. Thus investing in initiatives to provide free access to

¹⁷ Policy learning is understood as a systematic process through which past experiences from the implementation of policies are used to improve and modify future policies

knowledge is critical for progress in adaptation. In addition enough financial resources should be made available to support new research that can fill existing gaps around policy maker needs.

Recommendation 2: The visibility and usability of the European Climate Adaptation Platform (Climate-ADAPT) should be enhanced and the connection to national adaptation portals and platforms should be strengthened

In addition to ensuring the timely production of high quality, relevant and comprehensible adaptation knowledge, information and data to support the development of evidence-based policies, special efforts should be dedicated to the adequate and effective knowledge brokerage. Sharing adaptation-relevant knowledge and experiences about best practices as well as further explanation on how the shared information can be used and applied to specific situations and across different scales is likely to support national, regional and local authorities in improving policy integration and coherence processes and in implementing adaptation action (D2.1, D2.2). In addition to information sharing, dissemination activities should be conceptualized and designed to promote also learning and enhance adaptive capacity. In such efforts innovative tools and approaches should be developed and used making best use of different disciplinary approaches and skill from science, social science, arts and humanities (e.g. geographic information system maps, live sketching, story telling).

National web portals are perceived by a wide range of actors as key entry points for the dissemination of adaptation-relevant knowledge. The number of countries that have already developed a national adaptation portal or that are currently in this process is growing continuously. In some cases, the relevant platforms have been developed in the context of the implementation of the countries' national adaptation strategies (D2.2). Together with the European Climate Adaptation Platform (Climate-ADAPT), which has been recognized by the EU Adaptation Strategy (2013) as the 'one stop shop', national adaptation platforms provide already a good amount of information on best practices and expertise. However, Climate-ADAPT could better facilitate the development of a European adaptation community and strengthen the implementation of the EU Adaptation Strategy, if it were used more actively to strengthen links with and between national portals, facilitate person-to-person meetings, and host webinars. A more active use of Climate-ADAPT will require additional funding but this funding could be a highly cost-effective way of facilitating climate change adaptation in Europe (BASE Policy Brief #4).

Recommendation 3: Policy learning¹⁸ should be encouraged through the development of sectoral mechanisms that monitor progress in climate adaptation

Monitoring and evaluation are essential to ensure effective implementation of the EU adaptation strategy as well as on-going improvement of adaptation policy. DG CLIMA has committed itself to an overall monitoring of the Strategy, which should be complemented by sectoral mechanisms in all pertinent sectors to monitor progress on the integration of climate adaptation. To this end, existing sectoral provisions should be adjusted to provide essential information on adaptation to climate change and/or others should be newly developed. The development of monitoring mechanisms depends on the sector. Whereas in some sectors

¹⁸ Policy learning is understood as a systematic process through which past experiences from the implementation of policies are used to improve and modify future policies

there are monitoring mechanisms in place that can be adjusted to provide essential information on climate adaptation, in others these mechanisms have to be developed from scratch. While sectoral monitoring mechanisms target sector policies at the Member State level, particular attention should also be placed on how the different DGs promote adaptation in their policy domain (D2.2).

Recommendation 4: Specific criteria and monitoring for funding of adaptation action should be included in EU funding mechanisms

The EU Adaptation Strategy has strengthened the general commitment to adaptation in EU funding mechanisms (D7.1), but in practice this has often only been seen in high-level policy objectives and not in operational funding criteria. The use of funding for adaptation should thus be monitored in order to verify the actual use and to create a base for future evaluation and learning through the effective use of funding. In doing so it will be easier for both the EU and national governments to identify and communicate success stories more readily. Therefore, more explicit prioritisation of adaptation action is needed in EU funding through funding targets, clear requirements for considering adaptation needs in applications (including criteria for assessing this) and regular monitoring of spending that contributes to advancing adaptation in all EU mechanisms (e.g. through regular check-points during the course of funding periods). These should be laid out at the European level (DG REGIO, DG AGRI, DG RTD...), and Member States should also play a key role.

Recommendation 5: Specific evaluation criteria such as the BASE ‘BECCA’ should be used by policy-makers to learn about adaptation policy design and progress

Evaluations can focus on the process of designing and implementing adaptation policies and/or their outcomes and impacts. Process evaluations are useful for assessing whether decision-making processes have operated in ways that for instance facilitate the integration of adaptation into sectoral policy making to maximize synergies and minimize incoherence. Outcome evaluations examine to what extent the objectives of adaptation policies have been achieved. While the latter requires experience in the practical implementation of policies, evaluations should consider both perspectives where possible.

To date self-reported evaluations have been positively used in some Member States to provide lessons from policy implementation to inform the revision of National Adaptation Strategies. This demonstrates evidence of institutional learning. Crucially, only few indicators have been developed and used to assess progress on adaptation so far. Hence, it is important that efforts concentrate on the development of relevant and – where feasible – quantifiable indicators to assess the adaptation progress. It is important that requirements for monitoring and evaluation are built into adaptation policies and strategies, and that they are actively used on a regular basis in updating NAS and other adaptation policies. D2.3 develops a set of evaluation criteria, the BECCA (BASE Evaluation Criteria for Climate Adaptation) that can be tailored by decision-makers to different contexts. The BECCA is a framework and the criteria it sets can be used to evaluate the implementation of adaptation policies and measures. The BECCA is based on existing frameworks and criteria sets for evaluating climate adaptation conducted at international and EU, Member States, sub-national and local level. The BECCA was ‘road-tested’ with the BASE WP5 case studies and, on the basis of their feedback, it was further developed to suggest how, and for which contexts, the BECCA can be used.

4.3.3 References

- D2.1 (BASE Deliverable 2.1) - Policy integration and knowledge use in the EU adaptation strategy
http://base-adaptation.eu/sites/default/files/Deliverable_2_1.pdf
- D2.2 (BASE Deliverable 2.2) - Knowledge use, knowledge needs and policy integration in Member States
<http://base-adaptation.eu/knowledge-use-knowledge-needs-and-policy-integration-member-states>
- D2.3 (BASE Deliverable 2.3) - BASE Evaluation Criteria for Climate Adaptation (BECCA)
<http://base-adaptation.eu/base-evaluation-criteria-climate-adaptation-becca>
- D4.2 (BASE Deliverable 4.2) - Experiences in bottom-up adaptation approaches in Europe and beyond
<http://base-adaptation.eu/experiences-bottom-adaptation-approaches-europe-and-beyond>
- D5.3 (BASE Deliverable 5.3) - Participation in climate change adaptation
<http://base-adaptation.eu/participation-climate-change-adaptation>
- D7.1 (BASE Deliverable 7.1) - Strategies for enhancing policy coherence: mainstreaming adaptation into key sectoral and development policies
http://base-adaptation.eu/sites/default/files/D_7.1_final.pdf
- BASE Policy Brief #4: BASE Policy recommendations
http://base-adaptation.eu/sites/default/files/BASE_Policy_Brief_%234_June%202016.pdf

4.4 Theme 4: Public participation should play a central role in designing and implementing adaptation measures

4.4.1 List of recommendations

1. Decisions about climate change adaptation should be seen more as a political exercise than a technical one
2. Public participation in climate change adaptation should be promoted in a way that serves to improve the knowledge base, the shared understanding of the challenge, the ownership and cost-effectiveness of chosen measures, and the public acceptance of and commitment to chosen solutions
3. The choice and use of participatory methods should receive the same attention as the choice and use of economic models

4.4.2 Insights behind recommendations

Recommendation 1: Decisions about climate change adaptation should be seen more as a political exercise than a technical one

The 23 BASE case studies show that different stakeholder groups assess adaptation measures differently. Some case studies involve very limited participation, while others are characterized by their extensive application of participatory methods (D5.3), especially in those participatory case studies where BASE partners were actively engaged in organizing deliberations about adaptation challenges and solutions, differences between stakeholder groups were clearly articulated. For example, when organizing a participatory cost-benefit assessment in Cascais, Portugal, a scenario workshop in the Czech Republic, or a multi criteria analysis in Copenhagen, Denmark, such differences become obvious (D5.3). We conclude from this that public participation helps articulate and clarify interests and preferences among different societal groups and actors, and that such differences are more likely to be ignored or simply not identified, if adaptation decision making is made in a non-participatory manner, thus disguising political choices as technical ones. A common feature of several of the participatory case studies (D5.3) was the fact that they engaged participants (stakeholders and citizens) in deliberations about the desired future of the areas to be adapted to climate change. By doing so, they deliberately connected discussions about adaptation to more general discussions about their visions for the future of their communities. It was a common experience across the case studies that such deliberations released a considerable amount of enthusiasm and creativity, shifting the view on adaptation from being a burden to also being an opportunity.

Recommendation 2: Public participation in climate change adaptation should be promoted in a way that serves to improve the knowledge base, the shared understanding of the challenge, the ownership and cost-effectiveness of chosen measures, and the public acceptance of and commitment to chosen solutions

The case studies show that the involvement of a wide range of societal actors in identifying and choosing between different adaptation measures tend to bring about positive effects such as: a higher level of social legitimacy and political commitment, local support for implementation, the involvement of private actors in

funding, and increased equity and justice with compensation of losses resulting from the chosen measures. The involvement of social actors can be equally useful in avoiding secondary effects, such as: negative effects of grey measures (e.g. dikes, breakwaters) on local ecological systems; trade-offs between grey measures and sports and/or tourism activities (e.g. a breakwater with a surf wave). Finally, participatory approaches are highly effective strategies for enhancing awareness, which is in its own right an adaptation policy. D5.5 provides in-depth analysis of case studies where a wide range of societal actors were involved and these positive effects were observed.

Building on analysis made in D5.3 of the level of participation in a number of case studies of adaptation decision making processes across Europe, it is quite clear that more could be done to include a wider range of stakeholders and citizens, particularly in the early stages of adaptation planning. The definition of “stakeholders” should not be limited to government officials and specific expert organisations. Local NGO’s small business owners, neighborhood association etc. often have equally legitimate interests at stake and decision-makers should take those into account as well.

Recommendation 3: The choice and use of participatory methods should receive the same attention as the choice and use of economic models

Interviews within the case studies and collaboration between BASE partners show that choosing and implementing the right participatory method is no trivial task. In BASE case studies, methodologies were continuously adjusted and at times co-developed or co-created with local stakeholder partners. As a result, new methods emerged such as the SWAP (Scenario Workshop and Adaptation Pathways) and methodologies were applied in new ways. For instance, Adaptation Pathways were used in several case studies and each was adapted and resulted in a context-specific application of this tool for decision making. D.5.5 relates in detail these findings.

It is quite clear from the case study experiences (see D5.3) and from similar experiences from other adaptation projects and research that decision-makers in charge of climate adaptation usually do not have the skills required for choosing between and implementing participatory decision making methods and processes. Moreover, participation can be time and resource intensive. That being said, decisions about CCA are political as well as technical, meaning that it is important democratically to use participatory methods. Many policy-makers might think it is cheaper to engage stakeholders when a decision has been made and is about to be implemented. But this would only be the case if stakeholders, upon whose compliance implementation is dependent, agree with the decision and have a sense of its ownership. If they do not, there is a risk of implementation failure and/or decision-makers having to start the decision-making processes all over again, both of which have large resource implications. Participation in the earlier stages of the decision cycle might help mitigate (but not eliminate) this risk.

4.4.3 References

- D5.1 (BASE Deliverable D5.1) - Climate change, impact and adaptation scenarios for case studies <http://base-adaptation.eu/climate-change-impact-and-adaptation-scenarios-case-studies>
- D5.3 (BASE Deliverable 5.3) - Participation in climate change adaptation <http://base-adaptation.eu/participation-climate-change-adaptation>
- D5.5 (BASE Deliverable 5.5) - Adapting to Climate Change: Comparison of Case Studies

<http://base-adaptation.eu/adapting-climate-change-comparison-case-studies>

4.5 Theme 5: A clear distribution of responsibility for adaptation action should be established and consider the relationship between state and private actors and levels of governance

4.5.1 List of recommendations

1. In accordance with the EU subsidiarity principle, adaptation measures should be adopted and implemented at the decision-making level best suited for this purpose in each particular instance.
2. To enhance synergies between state and private measures, and thus policy integration, adaptation planning should address the question of compliance in terms of coherence between the key choices made by the public sector and those made by the private actors.

4.5.2 Insights behind recommendations

Recommendation 1: In accordance with the EU subsidiarity principle, adaptation measures should be adopted and implemented at the decision-making level best suited for this purpose in each particular instance

At the EU level, in some areas particularly germane to climate adaptation (such as spatial planning), the competency of EU actors (such as the Commission) to propose common policies is still relatively limited with Member States often insisting on preserving a high degree of autonomy. Moreover, while it is important that action is taken across all levels of government (EU, national and local) to ensure a more coherent approach to adaptation policy making (D2.1, D2.2), it is the local or regional level where adaptation measures can be best tailored to the local conditions (D.5.5). In addition, local, bottom-up and decentralized approaches are also instrumental for motivating partnership between governmental and private actors to take action (D5.5, D5.4). However, it is not entirely clear exactly how the responsibility for adaptation action should be distributed among different tiers of government (EU, national, local). Only a few national adaptation strategies have attempted to assign clear responsibilities to sectors (D2.2). Moreover, the EU Adaptation Strategy and many national adaptation strategies (D2.1 and D2.2) are far from clear in terms of the allocation of responsibility between different governance tiers. Analysis from BASE (D2.2) demonstrates a fair degree of uniformity between national adaptation strategies regardless of political system and culture. Generally speaking, from this analysis the responsibility of national governments is to initiate, set up and monitor national adaptation strategies and action plans. In this role as a moderator, state actors at the national level have to create framework conditions for the adaptation measures taken by actors at the national and regional/local level. However, analysis from BASE (D2.2, D7.1, 7.2) suggests that in many cases the EU Adaptation Strategy and national adaptation strategies at best only weakly encourage local-level action where it is needed. Through leadership, public authorities can better facilitate policy coherence that maximises synergies and minimises contradictions within existing policies across sectors and levels of governance (D.7.1, D2.1, D2.2).

In times of economic austerity, the search for these synergies and a longer-term perspective are needed to efficiently allocate public budgets that pay adequate attention to adaptation. While the EU and member states have dedicated funding for adaptation for example through the structural funds, it does not necessarily reach areas where the need is greatest. Greater effort, including capacity building (D7.1), is required to support local action. Obstacles to investments in vulnerable areas include the financial risk of public and private funders (BASE Policy Brief #4). EU and Members States can alleviate the problems by providing full or partial financial risk guarantees. Such guarantees can be achieved through policy instruments such as

the issuing of climate investment bonds by the EC and/or Member States, regulation or a mix of these instruments. These instruments can also encourage private investments in adaptation.

Recommendation 2: To enhance synergies between state and private measures, and thus policy integration, adaptation planning should address the question of compliance in terms of coherence between the key choices made by the public sector and those made by the private actors

Building targeted partnerships between key government, private, and civil society actors can help to contribute to enhanced funding, and increase capacities to directly engage with other actors operating at different levels, such as local communities and national and EU actors. However, the direct responsibility of national and regional governments and their relationship to private actors varies remarkably across the EU. A transparent and comprehensive division of responsibilities between state and private actors at different governance levels is a necessary—but not the only—precondition for effective adaptation measures under complex legislative and market regulations. Clear-cut and shared responsibility and co-operative relationships between state and private actors are required for creating incentives for taking action, realizing co-benefits between adaptation and sectoral policies and for making policy implementation more coherent particularly at the local level (D5.4). In addition the inclusion of non-governmental actors at the local level, can increase ownership and a sense of responsibility, and importantly to develop innovative solutions suited to local conditions (D5.3, D5.5).

The risks and opportunities of climate change will affect the various areas of life, sectors of the economy and regions in different ways, not least because of the varying spatial effects and the differing adaptive capacities. These regional and socio-economical differences also raise new and important questions about the distribution of responsibility among state and private actors operating at different levels and in different sectors. These interdependencies between state and private actors are context specific and dynamic and thus vary between sectors and national political systems. Unclear competencies or overlapping division of responsibilities between state and private actors, often in respect of the problem of budgeting, undermine or delay effective adaptation policies through conflicting incentives, but also through the financial constraints and competition for resources between different groups of actors. Moreover, there are trade-offs between adaptation measures taken by state and private actors. In the case of flood management, state supplies after floods often undermine incentives of private actors to invest into self-provision and protect their buildings against extreme events or to resettle into more protected areas (D5.4, D5.5).

Assigning responsibility between state and private actors can vary depending on the political context of the different member states. For instance, in some countries (like Germany), individual responsibility and the primacy of self-provision are important guiding principles of the national adaptation strategy and action plan (D.2.2). In accordance with both the subsidiarity and self-provision principle, one of the responsibilities of the German Government is to set strategies to motivate and enable private actors (such as citizens and enterprises themselves) by strengthening their ability to take informed decisions and act effectively. Examples are construction projects, refurbishing buildings or health provision. Single actors who display a great willingness to act are able to make use of unclear responsibilities to integrate adaptation concerns into existing institutions (see the Jena Case, D5.4). In other countries (e.g. Denmark and the UK), public authorities are seen more as the main actors responsible for adaptation planning and thereby for fostering and facilitating private adaptation. Thus adaptation planning and implementation largely depends on the readiness, or not, of public authorities to take action (e.g. see the Dawlish case D5.4). Given the uncertainty and differences around the precise role of non-governmental actors in many of our studied contexts there needs to be more rigorous assessments of how private actors (and civil society) contribute to the adaptation planning processes. These assessments are instrumental to demonstrate (and provide compelling evidence

of) co-benefits of state and private cooperation and can contribute to motivate future actions. They can be based on cost-benefit-analysis, but have to include criteria such comprehensiveness, transparency, legitimacy, and political effectiveness to take into account their political robustness over time.

4.5.3 References

- D2.1 (BASE Deliverable 2.1) - Policy integration and knowledge use in the EU adaptation strategy
http://base-adaptation.eu/sites/default/files/Deliverable_2_1.pdf
- D2.2 (BASE Deliverable 2.2) - Knowledge use, knowledge needs and policy integration in Member States
<http://base-adaptation.eu/knowledge-use-knowledge-needs-and-policy-integration-member-states>
- D5.3 (BASE Deliverable 5.3) - Participation in climate change adaptation
<http://base-adaptation.eu/participation-climate-change-adaptation>
- D5.4 (BASE Deliverable 5.4) - Implementation of climate change adaptation: Barriers and Opportunities to adaptation in case studies
<http://base-adaptation.eu/implementation-climate-change-adaptation-barriers-and-opportunities-adaptation-case-studies-1>
- D5.5 (BASE Deliverable 5.5) - Adapting to Climate Change: Comparison of Case Studies
<http://base-adaptation.eu/adapting-climate-change-comparison-case-studies>
- D7.1 (BASE Deliverable 7.1) - Strategies for enhancing policy coherence: mainstreaming adaptation into key sectoral and development policies
http://base-adaptation.eu/sites/default/files/D_7.1_final.pdf
- D7.2 (BASE Deliverable 7.3) - Synthesis of integrated climate policy perspectives
<http://base-adaptation.eu/synthesis-integrated-climate-policy-perspectives>
- BASE Policy Brief #4: BASE Policy recommendations
http://base-adaptation.eu/sites/default/files/BASE_Policy_Brief_%234_June%202016.pdf

