



Regions 4Climate

Fostering smarter, faster and systemic adaptation in Burgas, Køge Bay, Pärnumaa and Uusimaa

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This policy brief examines the regional governance and steering instruments of four European regions in the Regions4Climate Smarter Adaptation Challenge Suite and provides recommendations for smarter, faster and more systemic adaptation.

We found that

- Burgas, Køge Bay, Pärnumaa and Uusimaa regions are investing in climate-risk assessments, modelling, digital tools, climate services and knowledge platforms that improve understanding of risks, vulnerabilities and adaptation needs.
- Existing data and risk knowledge need to be more systematically integrated into local and regional planning, as well as municipal investment processes.
- Local, regional and national authorities should define clearer mandates related to adaptation, ensure policy alignment across governance levels, and improve cross-sectoral coordination to reduce fragmentation and support local implementation.
- Local and regional authorities need to mainstream adaptation across sectoral policies, planning frameworks, financing mechanisms and innovation capacities to move beyond isolated projects and enable long-term resilience.

Introduction

Climate change poses a growing threat to regions across Europe, with more frequent and severe weather events disrupting communities, economies, and ecosystems. Adaptation is essential to build resilience and protect vulnerable areas, but it requires adequate planning, coordination, and policies.

The European Commission's European Missions - Adaptation to Climate Change Implementation Plan outlines three objectives: smarter, faster and systemic adaptation. The plan presents these objectives as sequential and mutually reinforcing intervention steps that build on one another to achieve the Mission's overall goals. **Smarter adaptation** involves assessing opportunities and risks and creating a solid evidence base for decision making (See Fig. 1). Smarter adaptation is the foundation for faster and more systemic adaptation, which is helping to accelerate adaptation action and deliver cross-border value and impact at scale.

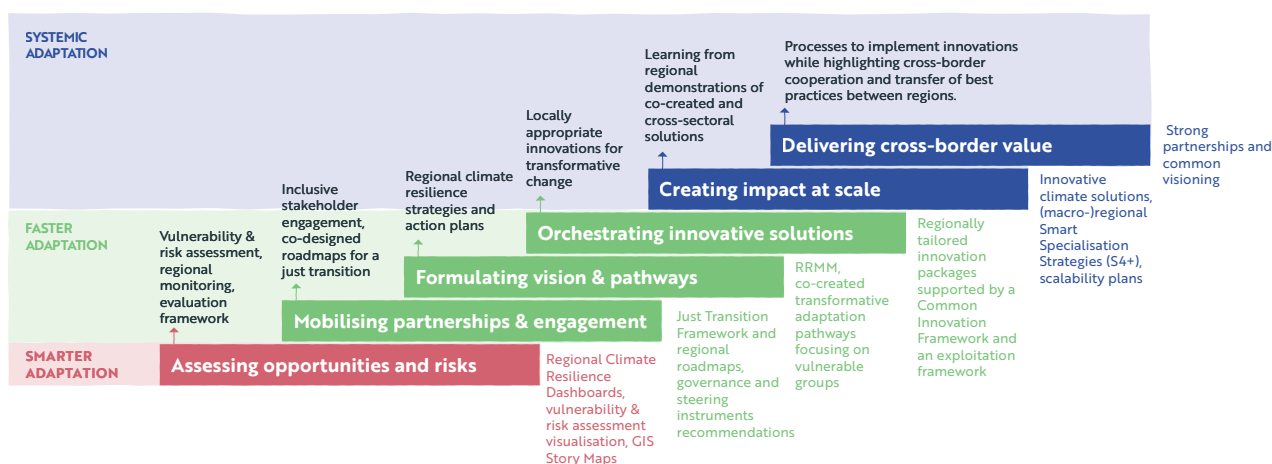


Figure 1 The implementation steps for achieving Adaptation Mission Objectives, which also align with the smarter, faster and systemic adaptation approaches. Adapted from the EU Mission on Adaptation to Climate Change – Implementation Plan. Smarter adaptation refers to step 1, Faster adaptation refers to steps 2-4, while Systemic adaptation refers to steps 5-6. Selected actions that regions are implementing in Regions4Climate are on the left of each step and selected research and innovation support examples provided by the project are on the right. These examples are not exhaustive.

This policy brief synthesises the Regions4Climate project’s governance and policy insights related to transformative adaptation for **Challenge Suite 2: Smarter Adaptation** in the Regions4Climate regions of **Burgas, Køge Bay, Pärnumaa and Uusimaa**. In their Regions4Climate Innovation Packages, this group of regions is working to **improve the evidence base for their adaptation work** through digital twins, modelling, as well as improving the understanding of vulnerability to climate impacts. Although this Challenge Suite focuses on their Innovation Package activities that support smarter adaptation, the recommendations take a more comprehensive perspective based on insights related to smarter, faster and systemic adaptation.

Climate change adaptation is the process of adjusting to current or anticipated climate conditions and their impacts¹, enhancing adaptive capacity, strengthening resilience, and reducing vulnerability². **Governance** is considered the combination of formal and informal institutions, procedures and mechanisms that steer policy and decision-making³.

This policy brief draws on conclusions from the Regions4Climate Governance recommendations (D4.3)⁴, draft Policy recommendations (D4.4)⁵, as well as the regions’ self-assessment results using the Regional Resilience Maturity Model (RRMM)⁶. The RRMM evaluates adaptation readiness across multiple dimensions and indicators. For this policy brief, we draw on the results focused specifically on governance- and policy-related dimensions, namely Dimension 1: Regional Governance and Institutional capacity, Dimension 2: Plans and policy instruments, and Dimension 6: Finance and resources. The overview of relative maturity patterns across regions helps contextualize the strengths and gaps identified in the governance and steering instrument

- 1 IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 p
- 2 Singh, C., Iyer, S., New, M.G., Few, R., Kuchimanchi, B., Segnon, A.C., Morchain, D., 2022. Interrogating ‘effectiveness’ in climate change adaptation: 11 guiding principles for adaptation research and practice. *Climate and Development* 14, 650–664. <https://doi.org/10.1080/17565529.2021.1964937>
- 3 Levi-Faur, D. 2012. *The Oxford Handbook of Governance*. Edited by D. Levi-Faur. Oxford: Oxford University Press. p. 8
- 4 Malmström, et al. 2024. Regions4Climate D4.3 Governance Recommendations.
- 5 Tuhkanen, et al. 2025. Regions4Climate D4.4 draft Policy and Steering Instrument Recommendations.
- 6 Manuelli, et al. 2023. Regions4Climate D4.1 Regional Resilience Maturity Model and Framework.

analysis. This analysis assesses how regional governance strengths and gaps contribute to faster, smarter, and systemic adaptation. The brief aims to share integrated governance and policy recommendations for adaptation with local and regional authorities within the Challenge Suite 2, as well as with local and regional governments across the EU more broadly.

Climate adaptation governance can be understood by considering aspects such as the structure, effective coordination among local, regional, and national authorities, key actors driving decision-making and implementation, and mechanisms, such as steering instruments. These include regulatory instruments, such as regulatory frameworks and policies; financial instruments, such as financial incentives and penalties, dedicated funding, etc., and informational instruments, such as collaborative platforms, networks, etc... Clarifying responsibilities, empowering key actors, and optimizing the tools used to achieve governance objectives enable policymakers to strengthen climate adaptation governance.



Map 1 The four regions of Challenge Suite 2

Regional governance and steering instrument policy analysis

Burgas

- **Geography** – Burgas region is represented by Burgas Municipality, which is located in southeast Bulgaria along the Black Sea coast (559, 15 km²; population around 195,900). The region is characterised by a mix of coastal zones, wetlands, lakes, agricultural land, and urban areas, making it both ecologically rich and highly exposed to coastal and flood-related risks. The largest city, Burgas is situated between the sea and surrounding lakes and wetlands. Its urban core is dense with limited green space.
- **Economy** – Burgas Municipality is a key industrial hub with important transport infrastructure, including a large port, airport, and rail and road networks. Major sectors include chemicals, shipbuilding, fishing, tourism, transport and logistics services.
- **Governance** – Bulgaria is a unitary state with no legislative powers at the sub-national level, but with recognised local self-government. It has three levels of governance: central government, districts/provinces, and municipalities. Burgas region includes 13 municipalities, including Burgas Municipality. Bulgarian municipalities have administrative competencies and some financial autonomy. Adaptation is strategically framed at the national level but is primarily driven and implemented at the municipal level, with limited coordination at the regional/district level.
- **Regulatory instruments** – Bulgaria adopted a National Climate Change and Adaptation Strategy and Action Plan (2019) that provided a baseline assessment and sectors' prioritization. At the sub-national level, a key adaptation policy is the Flood Risk Management Plan (2022–2027) for the Black Sea Basin. Climate resilience is also integrated into several strategic planning instruments, including the Sustainable Energy and Climate Strategy and Action Plan 2021–2030, the Integrated Development Plan of Burgas Municipality, the Long-Term Energy Efficiency Program of Burgas Municipality 2021–2030, and the Sustainable Urban Mobility Plan of Burgas Municipality 2023–2031. These frameworks define goals, measures and indicators while integrating climate mitigation and adaptation priorities across sectors.
- **Financial instruments** – Funding is largely project-based, relying on EU programmes (e.g. LIFE, Horizon, Operational Programmes) and the National Recovery and Resilience Plan, a large part of which is financed by the EU. Additional instruments include national funding for risk mitigation, local funding from the municipal budget and municipal start-up support programmes.
- **Informational instruments** – Knowledge is generated and shared regionally through tools such as the public platform Smart Burgas and the Integrated Water Management System of Burgas Municipality. The Local Climate Resilience Unit also mobilises knowledge in Burgas, which has a dedicated digital platform for public consultations on local climate adaptation and mitigation topics, projects and policies. Burgas Municipality also builds knowledge through participation in international networks. The Regional Council for Development supports monitoring and coordination; however, according to the RRMM analysis, monitoring and evaluation systems remain relatively limited.

STRENGTHS

- **Strong information systems:** Local climate-related information is generated to support decision-making at the local level. The municipal development plan includes measures to upgrade Burgas city's resilience to climate change by improving the integrated flood risk management information system and developing an integrated urban adaptation model to identify areas vulnerable to natural hazards and heat island effects. The plan also assesses water scarcity and drought risk⁷. The adaptation plan further supports local decision-making by creating a climate and meteorological database and installing sensors to upgrade the water management information system⁸.
- **Synergies between adaptation and preparedness to foster local resilience:** The municipality fosters risk preparedness by establishing early warning systems for vulnerable groups and implementing the "Municipal Disaster Risk Reduction Programme 2025-2030", focusing on coastal sections at risk and flood risk prevention and management measures⁷. Additionally, Burgas municipality will also develop guidance on societal "behaviour and action in case of disasters, accidents and catastrophes"⁷.
- **Scale-up of NbS across sectors:** The Burgas municipality aims to create an NbS catalogue for risk mitigation, the development of green space and the connectivity of the green infrastructure elements and green corridors⁷. Considering connectivity is key to scaling up NbS. The adaptation plan also includes afforestation in urban areas such as spaces between residential buildings and along main thoroughfares to mitigate heat islands and utilise green infrastructure to reduce particulate pollution⁸.
- **Participatory instruments:** The Municipality has developed the programme "My City, My Neighbourhood, My Street", which enables Burgas residents living in condominium buildings to improve the spaces in front of their homes. Through a competitive process, citizens can implement landscaping and urban improvement projects and receive public funding, which is supplemented by co-funding from property owners.
- **Broad stakeholder involvement:** Adaptation efforts engage public, private, and third-sector actors alongside citizens, ensuring that all key societal groups are represented in the political and decision-making processes.

AREAS OF IMPROVEMENT

- **Financial instruments:** According to the RRMM analysis, financial resources for climate resilience are integrated into municipal planning frameworks and action plans. However, these resources are limited, largely project-based, and funded by national or EU programmes rather than supported by a dedicated or continuous budget at the regional or local level. Further, while the private sector is engaged in adaptation, its participation is limited; it is voluntary, with no regulatory or financial requirements.
- **Incoherence between plans:** Stakeholders perceive the General Spatial Plan for Burgas Municipality (2021–2023) as limiting local climate resilience and conflicting with the municipal development plan because the spatial plan does not sufficiently account for the local regulatory framework or the need to develop blue-green infrastructure.
- **Insufficient vertical and horizontal governance:** Adaptation responsibilities are unclear between local and national governance levels. Interaction between national and local levels is characterised by a top-down strategic framework and decentralised municipal implementation. While compliance is coordinated, there is a lack of clarity around aligning responsibilities, integrating data and monitoring systems, and

⁷ Integrated development plan for Burgas Municipality 2021-2027 (2021)

⁸ Sustainable Energy and Climate Strategy and Action Plan 2021-2030 (2022)

ensuring consistent implementation across governance levels. Also, without district-level coordination or collaboration in adaptation, regional resilience is fragmented. Governance structures for regional–local collaboration exist in Burgas, but the RRMM analysis notes that cross-sectoral coordination within the municipal administration remains limited, as climate-related responsibilities are distributed across several directorates and often require coordination with national authorities and research institutions.

Køge Bay⁹

- **Geography** – The Køge Bay project area or “region” covers suburban communities stretching 20 km south of Copenhagen along the shallow Køge Bay, part of the Øresund maritime strait. The area has a population of 900.000 and covers 550 km². The area includes suburban settlements, infrastructure corridors, and coastal zones exposed to storm surges, heavy rainfall, river flooding, and rising groundwater.
- **Economy** – The Køge Bay project area is part of the Greater Copenhagen economy, characterised by knowledge-based industries, services, and logistics, alongside light industry and warehousing.
- **Governance** – Denmark is a unitary state on a decentralized basis with central, regional, and municipal levels of government. Køge Bay is not an administrative unit but rather an area made up of 11 municipalities. These municipalities are located within the two regions Region Zealand and the Capital Region of Denmark. The national level has legislative power, while municipalities and regions have self-governing capacities and can pass binding local/regional level spatial regulations. Municipalities levy taxes, while regions depend on the central and municipal funding. The main responsibility of the regions is to provide health and hospital services.
- **Regulatory instruments** – The revised national Planning Act (PA 2018) obliges the municipalities to consider coastal flooding and erosion in physical planning and propose adaptation measures for exposed areas. This is overseen at the state level. Financial packages and plans for safeguarding measures have been adopted recently. Other plans include the National Climate Adaptation Plan I (2024), the proposed (but not yet approved) National Climate Adaptation Plan II (2026), as well as the Acceleration Package for Coastal Protection (2025).
- **Financial instruments** – Financial instruments include national funds and dedicated budgets at the municipal level. Adaptation projects are also financed by landowners and utility companies through tariff-based revenue, long-term investment planning, loans, bonds, and Public-Private Partnerships (PPPs). Project-related funding includes a national fund for sustainable urban projects and European projects.
- **Informational instruments** – Knowledge is mobilised through national agencies (national meteorological institute, geological service), research institutions, think tanks and local engagement processes, including citizen assemblies and stakeholder forums. Regional and local projects support knowledge exchange and participatory planning.

⁹ The RRMM self-assessment of Køge Bay no longer reflects the current context. This is due to the “Agreement on Healthcare Reform” adopted by the Danish government in November 2024, which removed the regional mandate to work on climate development projects as of December 2025. As a result, since the start of 2026, regional authorities no longer support municipal climate adaptation.

STRENGTHS

- **Robust information ecosystem:** Denmark provides high-quality climate services, risk assessments, and networks. The city of Køge plans to use data from the Danish Meteorological Institute to update its climate adaptation plan, e.g. to map flood risks, drought and heat island effects¹⁰. The Greve municipality also uses hazard and risk-mapping data from the National Coast Directorate to build a flood protection map for critical infrastructure¹¹.
- **Citizen involvement:** Several municipalities developed platforms to foster knowledge transfer (Climate Forum, Green council, digital citizen panel...). For instance, in Greve, a Climate Citizens' Assembly enabled citizens to formulate recommendations and proposals for policy action¹¹.
- **Diverse financial instruments:** Financial instruments include national funds for research, coastal protection, and forest restoration. Additional financing comes from utility companies through tariff-based revenues and investment planning, EU programmes, and cost-sharing mechanisms requiring benefiting landowners to contribute to project funding.
- **Nature-based Solutions:** For municipalities that apply for cofinancing of coastal protection (Pulje til Kystbeskyttelse), the Danish Coastal Authority will prioritize projects that give special consideration to nature, the environment, and the landscape, and that integrate these aspects as part of the technical solution. Emphasis is placed on solutions that are inspired and supported by nature while also being cost-effective, delivering environmental, social, and economic benefits, and supporting the development of resilience.

AREAS OF IMPROVEMENT

- **Low awareness:** Despite having a diverse network of actors working on climate issues, the survey identified gaps related to a general understanding at the local level of the differences between adaptation and other green transition issues, as well as an understanding of the general benefits of adaptation measures.
- **Multi-level coordination:** There is an unclear division of responsibilities and weak coordination across administrative levels in Denmark. In 2024, the health reform ("Sundhedsreformen") abolished the regions' responsibilities for regional development, including their possibility to engage voluntarily in areas such as climate adaptation development projects⁹. Before the reform, the regions facilitated collaboration between municipalities, supporting access to EU funding and promoting strategic adaptation efforts. The reform, therefore, represents a step backwards for multi-level climate governance, as effective climate adaptation depends on strong coordination across local, regional, and national levels.
- **Horizontal coordination:** Sectoral goals are not always aligned or coherent. Coordination of adaptation to shared risks across municipalities along shared ecosystems, such as the bay, may be weaker now that the regional level is no longer able to work on adaptation.
- **Municipal collaboration:** Municipal collaboration is not formalised and can often be very difficult. Climate adaptation projects are complex, and collaboration across municipal borders further complicates them. However, municipal coordination is informally supported by the Climate Alliance, a collaboration network between Local Government Denmark and Concito, a green think tank. They support all Danish municipalities in implementing their climate action plans and also share good practices across the municipalities.

¹⁰ DK2020 Climate Plan of Køge municipality (2020)

¹¹ Climate Action Plan 2050 of Greve municipality (2023)

Pärnumaa

- **Geography** – Pärnumaa is a coastal county in southwestern Estonia along the Gulf of Riga (5,407 km²; population around 85,700). The region faces risks from coastal flooding, erosion, declining river water levels, groundwater movement, heat, landslides, and declining winter ice coverage.
- **Economy** – Key sectors include industry and seasonal tourism, requiring careful balancing with environmental pressures. The region expects to grow due to the upcoming Rail Baltica corridor which will connect Estonia to Central Europe.
- **Governance** – Estonia is a unitary state where legislative power is held at the national level (Parliament), while municipalities exercise local self-government. Counties function as administrative units without independent legislative authority but play an important role as cooperation platforms between municipalities. In this capacity, counties support coordination and implementation of nationally defined policies at the regional level. Local authorities are responsible for managing local affairs, ensuring the provision of services, and addressing residents' needs in accordance with the law. In Pärnumaa, the Association of Local Authorities of Pärnu County acts as a key regional coordination body, facilitating cooperation between municipalities, stakeholders, and development initiatives.
- **Regulatory instruments** – Adaptation is guided by the National Adaptation Plan (2017) and municipal-level plans. The Pärnumaa Strategic Energy and Climate Action Plan (SECAP) (part of the County Development Plan) supports regional coordination, while a national Climate Resilient Economy Act has been drafted and has undergone consultation, but has not yet been approved. The Pärnumaa SECAP covers all the municipalities in the county, except for Pärnu City, which has its own SECAP. According to the RRMM analysis, this law is expected to strengthen integration across governance levels.
- **Financial instruments** – Financial instruments for adaptation include incentivising instruments with KredEx loans, EU project funding (Horizon and Interreg), and a regional budget allocated for expenditure on flood detection systems.
- **Information instruments** – Knowledge is generated and shared through a combination of regional, national and international initiatives. Regionally, the LEADER rural development programme and the Innovation Hub KOBAR quadruple helix collaboration platform, which supports cross-sectoral innovation, play a central role. International cooperation projects further strengthen regional capacities by enabling transnational knowledge exchange, piloting and transfer of good practices. Demonstration initiatives, such as the "Nature House" (Pernova Smart Park) in Pärnu, serve as focal points for public education and awareness-raising on climate change and sustainability.

STRENGTHS

- **Synergies between sectors:** The Association of Local Authorities of Pärnu County voluntarily coordinates the adaptation planning of the municipalities and aligns its work with Pärnu City's adaptation planning. As the SECAP is a part of the county development plan, the two policies (adaptation and development) are aligned.
- **Climate-proof infrastructures:** The region contributes to adaptation and DRR by adapting infrastructure to extreme temperatures based on evidence-based decision making. Planned measures include ensuring

sufficient drinking water during heat waves, upgrading stormwater systems¹², implementing greener parking solutions, enhancing building insulation and revising building standards¹³.

- **Increased risk preparedness:** Both county and city are including preparedness and crisis response topics within their adaptation planning and are involved in projects to collaborate on these topics^{12,14}. To reach the goal, the city intends to build the knowledge and capacities of officials, social workers and social service providers through participation in rescue exercises and to increase preparedness in critical services.
- **NbS planning:** The region has an aligned approach to NbS with mentions in the RDP and a more detailed approach described in the city and county SECAPs. The city recognises the benefits of those solutions (weather buffer, natural carbon sink...) and plans to restore wetlands and expand wetland planning more widely¹⁴. The city also aims to increase the proportion of natural areas and to develop a compensatory landscaping program for developers¹⁴.

AREAS OF IMPROVEMENT

- **Financial instruments:** Financial resources are limited, largely project-based or funded by EU programmes and not supported by a dedicated or continuous budget at the regional or local level. The private sector is not engaged, nor incentivised or required to participate in adaptation. Public-private partnerships are not widely used to mobilise investment for resilience, e.g. with utilities.
- **Informational instruments for innovation:** The national Estonian Smart Specialisation Strategy (S3) highlights the importance of research, development, and innovation in increasing the wellbeing and cohesion of society in the face of several challenges, including climate change adaptation. While local and county level informational instruments promote stakeholder engagement, e.g. LEADER, KOBAR innovation hubs, local and regional representatives are not systematically utilising them to incentivise and support innovation around climate adaptation and resilience, or in climate-proofing other areas of technological development.
- **Inclusive engagement in adaptation:** Despite existing stakeholder engagement instruments in the region, the county and city adaptation plans acknowledge that social vulnerability has been overlooked in adaptation planning^{12,14}. The Regions4Climate project is working on accounting for this in relation to heat stress, but the vulnerability to other climate risks remains unknown. Practitioners across different groups (e.g., healthcare professionals, social workers, and social service providers) have limited knowledge of how to adapt to climate risks.
- **Climate resilience coordination:** According to the RRMM analysis, governance structures for coordinating climate resilience in the region remain at an early stage. Dialogue between institutions exists, but climate resilience is not yet a major policy priority, and coordination often occurs on a voluntary basis. Local-regional collaboration is constrained by limited institutional capacity and the absence of dedicated climate specialists, although existing climate and energy plans provide a foundation for further coordination. The analysis also points out that although the regional and municipal climate and energy plans provide a framework for adaptation actions, the integration of resilience considerations into regulatory and planning frameworks remains limited.

¹² Pärnumaa Climate Plan 2030 (2023)

¹³ Development Strategy Pärnumaa 2035+ and Action Plan 2022-2027 (2022)

¹⁴ Pärnu Climate Plan 2030 (2022)

Uusimaa

- **Geography** – Uusimaa is Finland’s most urbanised region, located on the southern coast (9,098 km²; population around 1.7 million). The region has 230 km of coastline. It includes major cities such as Helsinki, Espoo and Vantaa, and faces climate risks related to warming temperatures, reduced snow and ice cover, and coastal impacts.
- **Economy** – Uusimaa is Finland’s economic engine, generating around 40% of national output. Key sectors include health and social services, wholesale and retail trade, as well as professional, scientific and technical activities.
- **Governance** – Finland is a unitary decentralized state with national, regional, and municipal levels of governance. Sub-national legislative powers are at the municipal and wellbeing services county level, while self-government at the regional level is limited. Based on municipal law (2015), municipalities have regulatory power and a high degree of autonomy in terms of decision-making, including land-use and resource allocation. Regional Councils are stipulated in Finnish law and represent mandatory joint municipal regional authorities; they have administrative duties, set regional development priorities, and prepare regional plans. Additionally, since 2026, ten newly formed regional Economic Development Centres have acted as regional arms of the Finnish state and have the responsibility to support the practical implementation of adaptation into regional development through coordination and funding (though not explicitly for adaptation).
- **Regulatory instruments** – Adaptation is guided by the Climate Act (2019) and National Adaptation Plan (NAP) (2022). While obligations are mainly at the national level, adaptation is integrated into land-use planning, with a focus on balancing development and ecosystem protection. The Climate Act (2019) obligates the relevant national authorities (ministries) to develop plans for their respective administrative branches, but does not impose obligations on regions or municipalities. The NAP sets targets and assigns responsibilities at the national level. Regional development strategies should include adaptation and mitigation as key topics. The region faces the challenge of balancing and managing the trade-offs between development and the protection or restoration of nature in land-use decisions. Uusimaa is revising its climate-related roadmaps to align with and implement the regional development plan.
- **Financial instruments** – Financial instruments are not considered highly influential in guiding regional climate resilience. There is a budget allocation for municipal flood protection works in larger cities and municipalities, and the regional partners access EU project-related funding (Horizon, Interreg, etc.). Public funding is also allocated to demonstration projects related to stormwater control schemes. Other instruments include non-compulsory agricultural and home insurance to cover extreme weather events.
- **Informational instruments** – Knowledge is generated through risk assessments, including flood maps, and research programmes. Institutions with units or projects on adaptation, such as the national Climate Unit of the regional Economic Development Centres (EKV), the Helsinki-Uusimaa Regional Council, the Ministry of Agriculture and Forestry, the Nordic Council of Ministers, and Innovation Frameworks, mobilise knowledge. Public consultations are held at the local level. While monitoring and evaluation are already in place at the local level, e.g. in Helsinki, they will be developed at the regional level in the future. Municipal networks in the region include the KUUMA network, which is made up of Hyvinkää, Järvenpää, Kerava, Kirkkonummi, Mäntsälä, Nurmijärvi, Pornainen, Sipoo, Tuusula and Vihti.

STRENGTHS

- **Regional policy development:** According to the RRMM analysis, governance structures for coordination and regional collaboration in Uusimaa are developing as a result of the regional adaptation strategy process. The regional council plays an important coordinating role with municipalities and national institutions, although its limited formal authority constrains its ability to enforce collaboration mechanisms.

Monitoring and evaluation systems are expected to be developed alongside the regional strategy in a nationally-led process. Furthermore, the regional climate adaptation strategy will serve as the primary framework for resilience planning. The strategy, together with cooperation, will also help connect the existing elements of climate resilience included in some sectoral policies and emergency preparedness frameworks. Currently, the absence of a finalized regional strategy limits integration across planning and regulatory processes.

- **Evidence-based approach to flood adaptation:** In different municipalities in the region, flood risk is tackled through data-driven assessments and modelling, including spatial floodplain analysis¹⁵, stormwater flood risk mapping¹⁶ and the integration of updated sea-level rise scenarios into flood strategies¹⁷. These analyses inform improved planning and implementation, supported by pilot stormwater solutions¹⁷, urban flood modelling and floodway studies¹⁵ and climate-proofed infrastructure and transport design^{16,18}.
- **Diversifying responsibilities to address the climate protection gap:** Espoo's and Helsinki's SECAPs address the climate protection gap by recognising the role of insurance. Espoo plans to explore opportunities to cooperate with insurance companies, while Helsinki states that insurance can be used to transfer, share and pool risks^{17,19}. Additionally, Helsinki's adaptation plan asks citizens and private entities to take adequate insurance against floods and storms, where relevant¹⁶.
- **Synergies between adaptation and disaster risk reduction:** The KUUMA network of municipalities plans to upgrade municipal preparedness plans to integrate climate change-related emergencies in cooperation with rescue services¹⁸. The municipalities also focus on identifying the impact of climate change on vulnerable groups and on creating action plans to protect and assist them, fostering local and just resilience¹⁸.

AREAS OF IMPROVEMENT

- **Limited financial instruments:** Municipalities in the region use financial instruments to a limited extent to incentivize climate resilience. Although specific insurances cover extreme events and PPPs are used to fund adaptation, a variety of incentivizing instruments (grants or loans), tax deductions, subsidies, or penalizing instruments for not complying or not participating in adaptation are not commonly utilised. According to the RRMM analysis, financial planning for climate resilience is still evolving and closely linked to the development of the regional adaptation strategy. At present, formal investment plans or dedicated financial strategies have not yet been established, and municipalities retain considerable autonomy in allocating resources for adaptation. It is also recognised that climate-proofing investments, e.g. into infrastructure, could be a way to mainstream adaptation.
- **Bridging innovation and climate change adaptation:** The region's S3 strategy currently acknowledges climate change adaptation and resilience but focuses on promoting mitigation²⁰. In this respect, climate neutrality is promoted through circular-economy solutions, new forms of energy production, bioeconomy innovations and new materials. However, the Regional Council is also seeking to address adaptation with the private sector, recognising that the global impacts of climate change will impact businesses in the region. Furthermore, they are restructuring policies to align with and complement

¹⁵ Espoo Climate Change Adaptation Action Plan 2022-2025 (2022)

¹⁶ Helsinki Climate Change Adaptation Policy 2019-2025 (2018)

¹⁷ SECAP of the City of Helsinki (2021)

¹⁸ KUUMA municipalities Adaptation to Climate Change Plan (2013)

¹⁹ SECAP of Espoo (2019)

²⁰ Smart Specialisation Strategy for Helsinki-Uusimaa Region (2020)

the regional strategy, bringing these two policy areas together under the key target of Environmentally Smart Helsinki-Uusimaa.

- **Multi-level and horizontal coordination:** Adaptation is currently steered nationally but subnational responsibilities related to adaptation lie with municipalities and the Wellbeing Services Counties. Municipalities within the region could have stronger engagement with other regional governments (more specifically, Wellbeing Services Counties) or governance agencies (EVK, Licensing and Supervisory Authority (LVV)). It would ensure clear delineation of adaptation responsibilities and coherence and alignment of goals and competences at the regional level and from the regional to the local level. Further, a holistic view on adaptation at the regional level is currently lacking. The regional adaptation plan, currently under development, will strengthen coordination.

Synthesis

The governance and policy analysis for the Smarter Adaptation Challenge Suite ^{4,5,6} shows that Burgas, Køge Bay, Pärnumaa and Uusimaa have established important foundations for climate adaptation, particularly through investments in climate-risk knowledge, data systems, modelling, risk assessments and collaborative knowledge platforms. In Regions4Climate, they are further advancing their work on **smarter adaptation** (see Fig. 1) by strengthening the evidence base for assessing climate risks, vulnerabilities and adaptation needs. The regions also demonstrate enabling conditions for **faster adaptation**, including strong partnerships, robust engagement practices, and preparedness planning.

At the same time, the analysis highlights areas where governance and steering instrument arrangements could be further strengthened to support **faster** and **more systemic adaptation**. In some of the regions, challenges remain in ensuring consistent coordination across governance levels, sectors and municipalities; clarifying roles and responsibilities; strengthening monitoring and evaluation systems; securing stable resources beyond project-based funding; and ensuring that climate-risk knowledge is translated into regular planning, investment and implementation decisions. Addressing these gaps would strengthen the regions' ability to move from knowledge generation to faster implementation and, over time, towards more coherent, inclusive and long-term systemic resilience.

Governance and steering instrument recommendations

This section presents an **integrated set of recommendations** based on two sets of regional analyses: one focused on governance⁴ and one focused on policy and steering instruments⁵. The recommendations below reflect elements relevant to local and regional governments in each region but are not necessarily shared by all regions. More details on a broader set of recommendations for each region can be found in the specific deliverables (Regions4Climate D4.3 and D4.4). In connection with the recommendations, we also present connected good practices from across Europe identified in the Regions4Climate [Good Practice Leaflet](#).

Strengthen multi-level governance and coordination

- Clarify adaptation roles, mandates, and responsibilities across local, regional, and national levels.

- Strengthen horizontal and inter-municipal coordination, particularly where climate risks cross administrative boundaries or require action across sectors, through formal mechanisms or informal platforms.
- Improve alignment between national adaptation frameworks and regional and municipal implementation, including through clearer guidance and practical implementation support.

Good practice addressing multi-level governance challenge: The Basque Country. The region launched Udalsarea 2030 in 2002, a cooperation network to promote sustainability across Basque municipalities through shared governance and technical support. It strengthens coordination between local and regional authorities and improves support for local sustainability policies.

Mainstream climate adaptation across sectors and planning frameworks

- Integrate climate adaptation systematically into key sectoral policies, such as regional development, spatial planning, infrastructure, water management, and emergency preparedness, where relevant.
- Review and align existing planning frameworks to identify inconsistencies, gaps and trade-offs that may undermine climate resilience.
- Strengthen cross-sectoral coordination so that adaptation objectives are coherent across departments, policy areas and implementation processes.

Secure and diversify funding for climate resilience

- Embed climate resilience in stable municipal, regional and infrastructure investment cycles, reducing dependence on short-term project funding where this remains a barrier.
- Broaden and better coordinate the use of financial instruments, including dedicated budgets, co-financing, loans, insurance, grants and subsidies, according to regional and municipal contexts.
- Mobilise private-sector, utility and landowner contributions where appropriate, including through cost-sharing mechanisms, with clear incentives, responsibilities and safeguards to support public climate-resilience goals.

Improve knowledge use, monitoring, and decision-making systems

- Improve the translation of climate-risk assessments, vulnerability data and climate services into planning, implementation and investment decisions.
- Strengthen cross-sectoral knowledge exchange and accessibility to address gaps in awareness, practitioner capacity and the practical use of climate information.
- Develop monitoring and evaluation systems across municipalities and regions where gaps remain, so adaptation progress can be tracked and policy updates are evidence-based.

Good practice for co-development and co-production of knowledge: South Aquitaine. For over 15 years, the region's joint sustainable coastal management initiative has united academia, technology centres, and public authorities to address societal needs by utilising research results, facilitating dialogue, and enabling co-creation among stakeholders from diverse backgrounds. The main lessons show that co-development bridges science and society but requires continuous and sustainable support alongside open and respectful dialogue.

Strengthen implementation support at the municipal level for stronger regional resilience

- Provide municipalities with clearer guidance, tools, peer-learning platforms and technical support, coordinated at national or regional level, where appropriate.

Good practice for addressing stakeholder engagement in climate action planning: Køge Bay. The Climate Alliance, a collaboration network between Local Government Denmark and the green think tank Concito, supports all Danish municipalities in developing binding climate action plans through the DK2020 framework. By providing a structured template, knowledge-sharing, and individual counselling, it ensures consistent planning nationwide. With 98 plans produced and revised every four years, the main learning is that centralised technical support can effectively drive widespread local climate action.

- Improve consistency in municipal implementation across the regions, especially where shared climate risks require coordinated action across administrative boundaries.
- Where capacity gaps exist, establish dedicated adaptation officers or cross-sectoral units at municipal level to improve continuity and coherence.



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