



POLICY BRIEF 2022:26

Perspectives into topical issues in society and ways to support political decision making.

This publication is part of the implementation of the 2021 Government plan for analysis, assessment and research (tietokayttoon.fi/en). The producers of the information are responsible for its content and it does not necessarily represent the views of the Government.

How to strengthen Finland's capacity to adapt to climate change?

Mikael Hildén, SYKE, Kati Berninger, Tyrsky, Jaana I. Halonen, THL, Sirku Juhola, HY, Janina Käyhkö, HY, Ilona Mettiäinen, LUKE, Päivi Tikkakoski, SYKE, Heikki Tuomenvirta, IL, Hilppa Gregow, IL, Oras Tynkkynen, Tyrsky

As climate change impacts increase, the ability to adapt must be systematically strengthened throughout society. Until recently, adaptation in Finland has advanced most clearly in water management, construction, and forestry sectors, where the long-term development of climatic conditions have traditionally been important. New measures are needed especially as impacts are likely to intensify. There is also a need to prepare for the consequences of impacts that occur outside the national borders. Adaptation should be examined as a way to foster the Green transition and comprehensive security. At the same time, the acceptability and fairness of adaptation measures need to be ensured.

The importance of adaptation is recognised

Despite mitigation actions, it is necessary to adapt to climate change in Finland. Adaptation measures can reduce the harmful consequences of adverse climate related events in the current climate. Strengthening adaptive capacity, which describes the ability of a country, region, or industry to address the consequences of climate change or even benefit from them, is therefore important.

Finland's National Adaptation Plan (NAP), extending to 2022, was approved in 2014 with a key aim to strengthen the national ability to adapt. The purpose of the KO-KOSOPU project was to evaluate the progress of national adaptation policy, especially in the light of the NAP and with reference to international adaptation policy development. In addition, the project examined the challenges that future climate and social development will pose to adaptation activities. Projections of climate change, Finland's revised Climate Act as well as the strengthening of the adaptation policy in the European Union emphasise the importance of an up-to-date NAP.

Strengthening adaptive capacity requires both crosscutting and sector specific measures

The impacts of climate change depend on exposure to climatic drivers and the vulnerability of the affected area or group of people. Sudden impacts arising from torrential rain, flooding or storms differ from those that develop over a long period, for example, due to a gradual increase in average temperature or precipitation. Warning systems can help manage risks related to sudden events, but in the longer term, adaptation must be proactive and strategic. This may require new management structures and practices. However, adaptation does not solely mean reducing risks but also identifying and exploiting positive opportunities. Adaptive capacity is a way of describing the potential ability of a society to avoid the adverse impacts of climate change and to take advantage of any opportunities that may arise.

Exposure, vulnerability and the ability to recover from the consequences of extreme weather events vary by sector and region. Adaptation measures must be tailored to the general planning of the sector or region, taking into account that also non-climatic

factors affect exposure and vulnerability. Economic, political or technological development also affect how climate impacts extend across borders.

The NAP is a strategic document, which, in accordance with the purpose of the Climate Act (423/2022), establishes a framework for planning and monitoring adaptation as part of Finland's national climate policy. To ensure implementation, it is essential that state authorities allocate sufficient resources to adaptation in different administrative sectors and regions, and ensure that municipalities also pay attention to adaptation to climate change. In many small municipalities, adaptation action is still at an early stage. Even basic information of key risks may be missing (Figure 1).

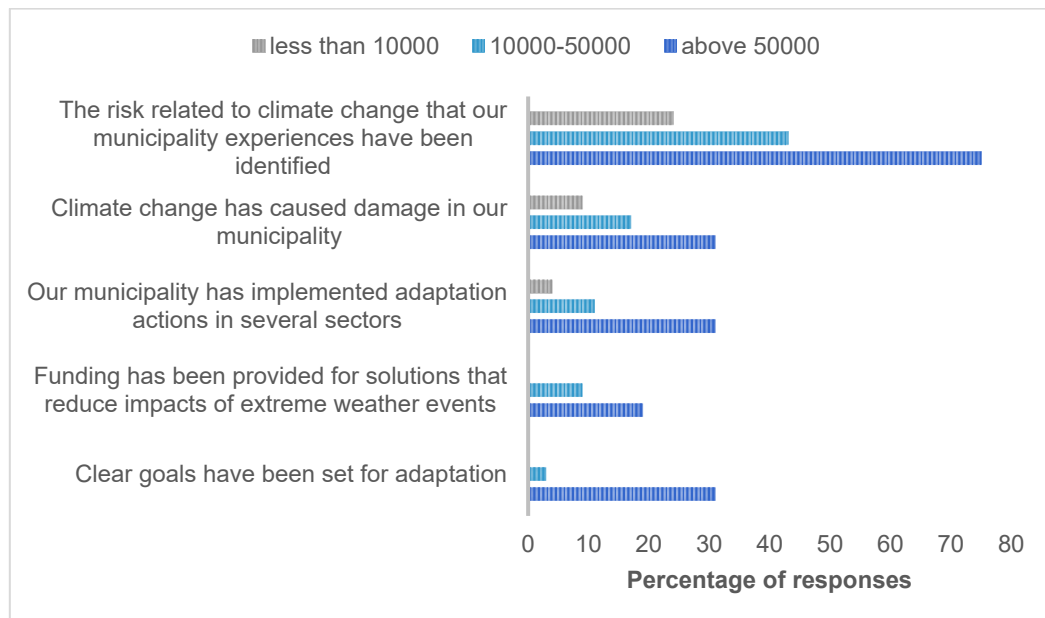


Figure 1. The state of adaptation action in municipalities of different size based on a survey carried out jointly by the KOKOSOPU-project and the Association of Finnish Municipalities (n=96)

The current state of adaptation in Finland

Strengths

The general awareness of the impacts and risks of climate change and the need to adapt has strengthened and is at a comparatively good level in Finland. Climate change has been widely recognised as an issue in legislation and other guidance.

Regional analyses of adaptation across sectors have become more common

due to the activities of Regional Councils and Centers for Economic Development, Transport and Environment (ELY). Regional analyses can support the implementation of adaptation measures also in those municipalities that do not have sufficient resources of their own to plan adaptation activities.

The need to plan adaptation measures has been identified, especially in cities with more than 50,000 inhabitants. Cities also use their networks to share good practices and develop ideas.

The adaptive capacity has strengthened in many administrative sectors with actions that generally improve preparedness for risks and various extreme conditions, although they are not always recognised as adaptation to climate change.

R&D activities have supported the development of adaptation activities, increased understanding of the challenges ahead and enabled the provision of climate services. For example, the Climateguide.fi portal and operation of the flood center (vesi.fi) offer versatile information for adaptation and preparedness. In addition, guidelines and guides have been prepared, for example, to assess the climate impacts of projects and legislation.

Challenges

Although the need to adapt to climate change has been widely recognised, only few obligations or concrete goals have been set for adaptation. In the absence of statutory obligations, authorities can only generally, within the framework of their limited resources, encourage stakeholders outside the public sector to adapt.

Responsibilities and related activities regarding adaptation are partly multi-dimensional, which creates challenges especially for municipalities and regional authorities. As the new wellbeing services counties created by the social welfare and healthcare reform become operational in 2023, the need for clarifying roles (and responsibilities) increases further especially at the regional level.

The development of adaptation activities has largely been based on projects, which creates obstacles for the institutionalisation of adaptation activities. In particular, the planning and implementation of regional and local adaptation activities has been hampered by the paucity of resources. The lack of permanent staff with adaptation expertise often results in short-term operations that lack follow-up. Climate action that has started can be delayed, for example, when personnel change or when projects end.

The lack of high resolution regional and local climate data has made adaptation planning difficult. There is plenty of general climate information available, but local, sector-specific and solution-oriented applied information or expertise is still limited. In addition, cross-border impacts can expose a sector, business, or region, (previously) considered less vulnerable, to the consequences of climate change.

All sectors lack information about the costs and benefits of solutions strengthening adaptive capacity. Identifying benefits can open up new opportunities to implement innovative adaptation solutions. Benefits can arise from protecting biodiversity, and increasing recreational opportunities or positive health effects.

Systematic monitoring of adaptation activities is only starting to develop. The lack of monitoring data hampers the assessment of the effects and effectiveness of adaptation measures. In evaluating adaptation to climate change, it is essential to pay attention to non-climatic factors that often have a strong influence on the outcome of adaptation actions and their effectiveness.

Overall evaluation

The main goal of the National Adaptation Plan (NAP) for the years 2014-2022 was to strengthen the societal ability to adapt to climate change. This goal has become increasingly important in light of the latest research results (IPCC WGI 2021, IPCC WG II 2022 and IPCC WG III 2022) and with the development of EU and international climate policy.

However, the conditions for achieving the goal have partially changed. First, global and transboundary impacts and consequences have become increasingly important. Second, issues related to equity, acceptability and fairness of the impacts of climate change and the social changes needed to adapt to them have become essential. Third, increasing attention is paid to the overall sustainability of adaptation activities and climate action generally. Therefore, adapting to climate change, mitigating it, improving circular economy and safeguarding biodiversity must be treated as parallel and linked goals.

The changing operating environment of adaptation activities must be reflected in the strategic documents that guide adaptation policies. Policies that have already been agreed upon must be put into practice. The state and the regional administrations need to ensure that especially the local authorities and other stakeholders have the necessary know-how and get support for strengthening their adaptive capacity.

Areas for developing adaptation policy

Climate change is a broad phenomenon that involves risks, but also opens up opportunities to reform sectors and operations. The state, regions, municipalities, companies and communities need to improve their ability to flexibly adapt to changing conditions and prepare for extreme weather events.

Based on the evaluation of the KOKOSOPU project, Finland's adaptive capacity can be strengthened by investing in four interrelated areas (Figure 2).

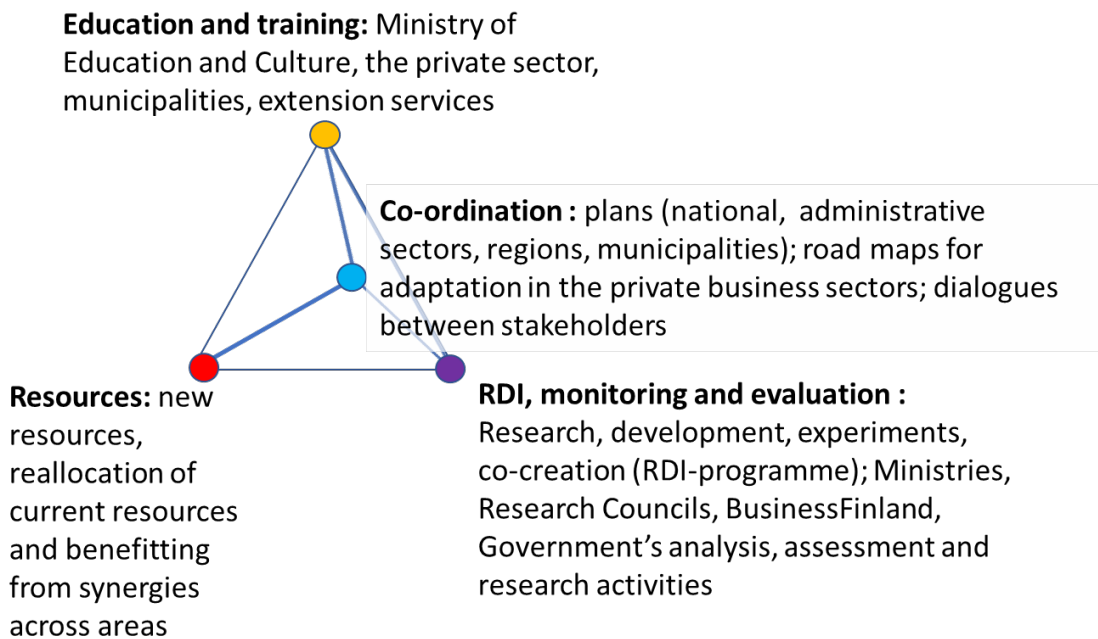


Figure 2. Areas for strengthening adaptive capacity and some of the responsible parties

Resources

Adaptive capacity cannot be strengthened without making resources available. However, the question of resources involves more than money. The know-how, the ability to coordinate activities, salient knowledge and a willingness to act, all significantly af-

fect the possibilities to obtain, direct and use resources. Adaptation can become balanced, efficient and effective when resources are targeted and also the other contributing factors (Figure 2) are duly strengthened.

Coordination and dialogues

Coordination should be strengthened by utilising existing procedures and functions. Adaptation to climate change should become an integral part of broader activities, in which various risks and development paths are examined. Currently climate change and climate risks are referred to in the National Security Policy Report, the National Risk Assessment, and in the Joint Future Work of the State Administration. However, it is essential that the different administrative branches progress to concrete adaptation measures and to an active joint exploration of the opportunities that adaptation to climate change also offers. A broad perspective, based on information and views from different administrative branches, is also needed to ensure fairness in adaptation. At the regional and municipal level, more systematic adaptation planning is key to increasing the effectiveness of climate measures. Adaptation planning should be made mandatory at all levels of administration and coordination between levels should be secured.

Interaction and dialogues between the public sector, the private sector, and civil society strengthen the conditions for identifying adaptation needs and solutions. Climate road maps should be developed by different sectors and industries to create a foundation for adaptation. The combination of adaptation and mitigation in road maps would promote a closer dialogue between adaptation and mitigation activities, which would improve the coherence and coordination of climate actions. In municipalities, dialogues between different actors are likely to increase the acceptability and effectiveness of climate measures.

Research, development, innovation, monitoring and evaluation

The knowledge base must be improved by investing in R&D activities and practical experiments, by developing and maintaining climate services (such as [Climateguide.fi](https://climateguide.fi); <https://kestavysloikka.ymparisto.fi/>), and by ensuring that adaptation measures are monitored and evaluated to improve their effectiveness, fairness and efficiency. Long-term research can provide greater insights into cascading impacts and impacts that are generally difficult to control and thereby provide a basis for their rational management. Scenarios can be used more systematically to ensure the consistency and compatibility of different policy areas and the activities of different branches of administration.

Training, education and know-how

Know-how in different fields is a prerequisite for identifying adaptation needs and planning adaptation measures. Competence needs should be more systematically identified by those responsible for education. This information should then be used to orient education at all levels, from primary school to adult education, to strengthen adaptive capacity.

Research data and methods

In the KOKOSOPU project, data was collected to find out the current state and challenges of adaptation in Finland. The material consisted of documents related to adaptation regulation and other guidance, other written sources, interviews, a survey sent to municipalities, and project funding statistics from regional development funds. Workshops were used to explore both the challenges of adaptation activities and hopes for the future. In addition, information on climate change and its projected development was collected to obtain a regional overview.

Document analysis was used in the research to find out the key features of implementation. The policy review applied multi-level governance as a theoretical reference framework.

Additional reading

Report: Adaptation to climate change in Finland –current state and future prospects, available in September 2022 at <https://tietokayttoon.fi/-/kokonaisarviointi-kansallisen-ilmastonmuutokseen-sopeutumispolitiikan-toimeenpanosta-kokosopu->

Blog (in Finnish): [Tilannearvio sopeutumisesta ilmastonmuutokseen luo perustan kansallisen sopeutumissuunnitelman uudistamiselle.](#)

References

- IPCC WG I (2021) Climate Change 2021: The Physical Science Basis. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, doi:10.1017/9781009157896.001.
- IPCC WG II (2022) Climate Change 2022: Impacts, Adaptation and Vulnerability. Cambridge University Press, Cambridge, UK and New York, NY, USA, doi:10.1017/9781009325844.
- IPCC WG III (2022) Climate Change 2022: Mitigation of Climate Change. https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf

Additional information

Professor Mikael Hildén, Finnish Environment Institute (SYKE), Latokartanonkaari 11, 00790 Helsinki. mikael.hilden@syke.fi

Professor Sirkku Juhola, University of Helsinki, Ecosystems and Environment Research Programme. sirkku.juhola@helsinki.fi

Chief researcher Jaana Halonen, Finnish Institute for Health and Welfare (THL), Mannerheimintie 166, 00300 Helsinki. jaana.halonen@thl.fi

Research Director Kati Berninger, Tyrsky Consulting, kati.berninger@tyrskyconsulting.fi

The KOKOSOPU-project has been carried out as part of the is part of the 2021 Government plan for analysis, assessment and research.

Chair of the steering group:

Ministerial Adviser, Climate Change Adaptation Kirsi Mäkinen

Ministry of Agriculture and Forestry, kirsi.makinen@gov.fi

