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9

Education, training and public awareness

This chapter describes how climate change is included in the education system of Finland from basic education to universities. This is followed by a portrayal of international training activities, including the training of experts from developing countries. Finally, raising public awareness is discussed. The roles of ministries, local authorities, other public bodies, non-governmental organisations, and other relevant stakeholders are explained. Several climate change or energy saving campaigns are also presented.

9 Education, training and public awareness

9.1 General policy

Climate change is incorporated in the Government's education and public awareness policies and practices. These policies and practices are under continuous development. Climate change issues are included in basic education and upper secondary level education as overarching values and as part of sustainable development education. Climate-change-related topics are also addressed by both universities and universities of applied sciences (Section 9.2).

The National Energy and Climate Strategy (2016) states that citizens should be provided with up-to-date information on all aspects of the Government's climate and energy policy. Information, guidance, best practices and tools are provided to help consumers make climate friendly choices in their everyday lives (Section 9.4). For example, international training activities are carried out by higher education institutions, and capacity building activities are also carried out as part of development cooperation (Section 9.3).

The national Medium-term Climate Change Policy Plan, in accordance with the Climate Change Act, is approved by each Finnish Government, most recently in 2017. The Government is scheduled to submit the next Medium-term Climate Change Policy Plan report to Parliament in 2022. The plan will mention the raising of education levels and advanced training in various sectors to support citizens in reducing their carbon footprints.

The Ministry of Education and Culture drafted a [policy document in 2020](#) for the sustainable development of its administrative sector. The policy document guides the activities of the administrative sector on a sustainable basis. Education, research, culture, youth, and sport policies can contribute to all the UN 2030 Agenda for Sustainable Development goals. For example, it entails equal cultural rights, high-quality early childhood education, the raising of skills and education levels, lifelong learning, access to information, cultural rights, and wellbeing and inclusion. Overall, the activities of the Ministry of Education and Culture's administrative sector promote cultural change, which is a prerequisite for the realisation of comprehensive sustainable development.

The Government approved a strategic programme to promote the circular economy in 2021. It sets out objectives for the use of natural resources and measures by which a society based on a carbon neutral circular economy will provide a sustainable foundation for our economy in 2035. The

programme highlights that knowledge, education, and continuous learning are requirements for a prosperous circular economy, as well as for solutions to the climate change challenges.

Under the Glasgow work programme on Action for Climate Empowerment (ACE), launched at the Conference of Parties serving as the meeting of the Parties to the Paris Agreement (Third session, CMA3) in 2021, the Parties are encouraged to engage all stakeholders (e.g. local governments, non-governmental organisations (NGOs), intergovernmental organisations (IGOs), business, and industry) in education, training, public awareness, public participation, public access to information, and international cooperation (= six elements of ACE) on climate change, reflecting the elements of Article 6 of the Convention. ACE serves as a framework for country-driven actions, giving the Parties flexibility in implementing and taking national circumstances and priorities and initiatives into account, while building long-term capacity and expertise in developed and developing countries for implementing ACE, including by promoting strong domestic enabling environments.

The activities this chapter describes include Finland's efforts to implement ACE. In particular, the activities of local governments are described in Section 9.4.3 and the activities of NGOs in Section 9.4.5. At the end of this chapter, there are short descriptions and Internet links to the projects, networks, and campaigns being carried out by various stakeholders.

9.2 Education

9.2.1 Education policy

All children in Finland receive compulsory basic education (comprehensive school) between the ages of seven and 16. All six-year-olds participate in pre-primary education. Having completed comprehensive school education, all students gain an upper secondary qualification. The minimum school leaving age was raised to 18 in 2021. Students continue to general (duration three to four years) or vocational upper secondary education and training (duration two to four years). The completion of upper secondary education gives students the eligibility to continue to higher education (Figure 9.1).

Higher education is offered by universities and universities of applied sciences (UAS). Both sectors have their own profiles. Universities emphasise scientific research and instruction. UASs, also known as polytechnics, adopt a more practical approach. A network of 14 universities and 23 UASs covers the whole country.

At the universities, students first complete the bachelor's degree, after which they may pursue the higher master's degree. As a rule, students are admitted to study for the higher degree. The target time for completing a master's

degree is generally five years. Universities also arrange separate master's degree programmes with separate student selections, for which the entry requirement is a bachelor's degree or corresponding studies. At the universities, students can also study for scientific or arts postgraduate degrees, which are the licentiate and the doctorate degrees.

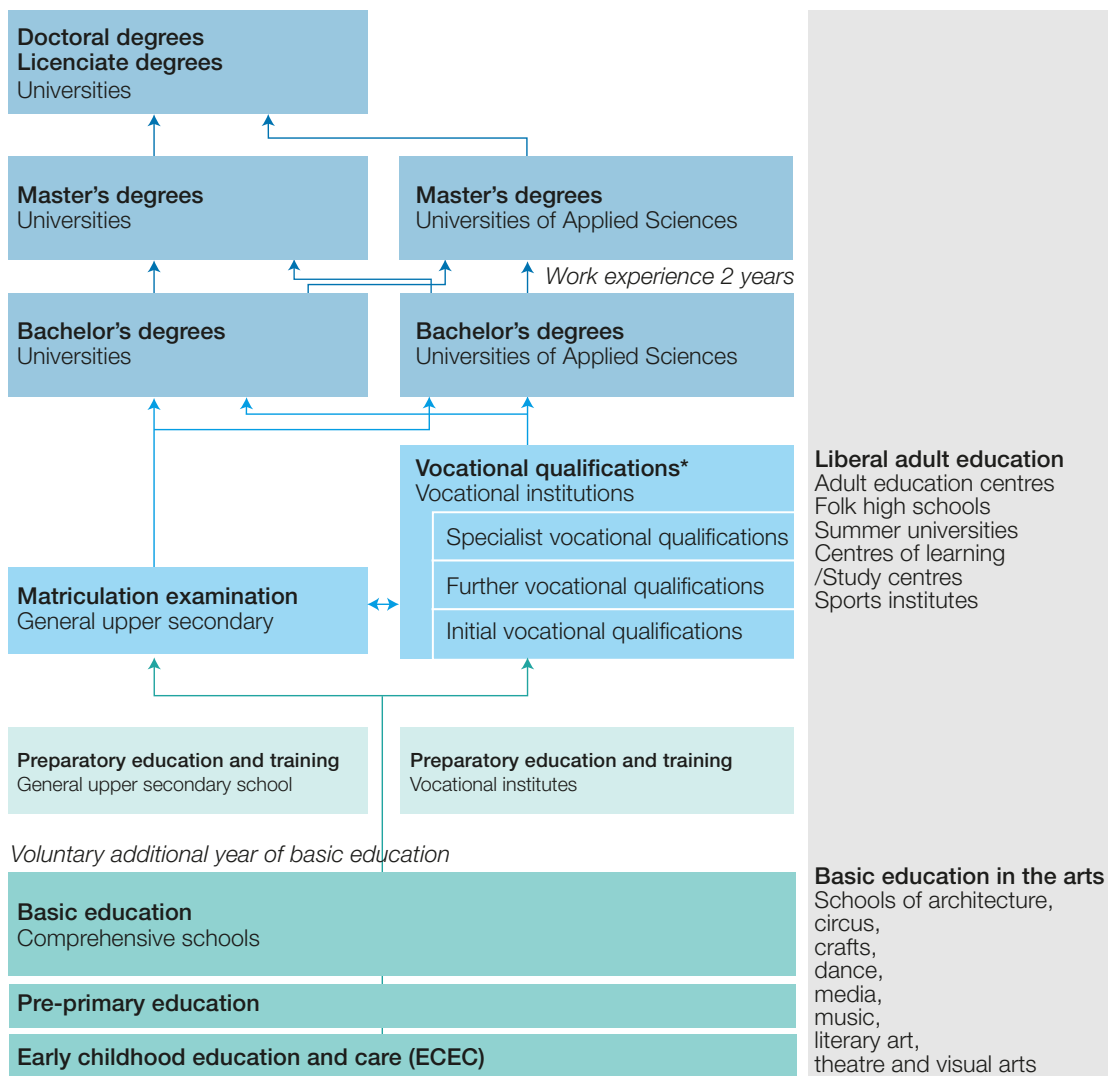
It takes approximately three to four years of full-time study to complete a UAS degree. Degree studies provide a higher education qualification and practical professional skills. Twenty-five thousand students were enrolled in universities in 2020. UASs admitted 40,000 students in 2020.

Educational institutions organise education and training intended for adults at all levels. Adult education comprises education and training leading to a degree or certificate, liberal adult education, and staff development, and other training provided or purchased by employers, as well as labour market training, which is mainly targeted at unemployed people. Efforts have been made to make the provision as flexible as possible to enable adults to study and work at the same time.

One of the basic principles of Finnish education is that citizens have equal access to high-quality education and training. Education is free at all levels, from pre-primary to higher education (degree education). Tuition fees are charged for citizens of non-EU/EEA countries in university and UAS programmes given in a foreign language. All schools in Finland are connected to the Internet.

All municipalities have at least one free public library, and there were more than 750 public libraries in 2018. About 70 per cent of Finns use libraries, which is the highest share among EU countries. The circulation of daily newspapers has decreased by 20 per cent in the last decade (355 per 1,000 adults in 2011). At the same time, the use of electronic media has grown rapidly.

Figure 9.1
Education system in Finland



* Also available as apprenticeship training by training agreement.

9.2.2 Education on sustainable development and climate change in the national curricula

Climate change issues are included in the education given on sustainable development in Finland's compulsory basic education system. Many school subjects deal with sustainable development and climate change, and they are also dealt with as a cross-curricular theme. Teachers decide the context and manner in which issues are taught. Teaching should form a systematic learning path, one that progresses through the grades.

The National Core Curriculum for Basic Education entered into force in 2014. With this curriculum, sustainability is not only one cross-curricular theme supported by some of the values in the value basis. Instead, it is the overarching task of basic education and is strongly embedded in all elements of the core curriculum. The new core curriculum, with its focus on promoting a sustainable lifestyle, represents a holistic approach to sustainability. This

approach covers all dimensions of sustainability, as well as students' and the school community's developing competences and their safety and wellbeing. Sustainability is also one of the seven transversal competences in the curriculum. Climate change is especially involved in the subject level in geography and biology.

The importance of ecological sustainability and climate change should not remain abstract when handled from the global to the local level. The Finnish national core curriculum steers ecological sustainability, showing that sustainability issues play a significant role in the curriculum, and that ecological sustainability is expressed in many subjects and in some schools in the school's operating culture.

The new National Core Curriculum for Upper Secondary Schools (2019) also highlights several sustainability and climate issues. Students (aged 16 to 19) should be familiar with the main aspects of the ecological, economic, social, and cultural dimensions of sustainable development and be able and willing to act in support of sustainable development in their own lives. Climate change is especially involved at the subject level in geography and biology.

Vocational education is guided by national qualification requirements for different fields (161 qualifications). In the 2018 vocational education reform, sustainable development was included in the common parts of vocational upper secondary requirements as a compulsory component. In addition, sustainable development and environmental issues have been integrated into the foundations of professional qualifications as competence requirements and skills requirements for each profession. In some areas, environmentally conscious activities are cross-cutting. For example, agriculture, forestry, and natural sciences are based on the wellbeing and sustainability of nature. The circular economy is an important theme e.g. in the construction sector and in the textile and fashion sector, while the social and health sector adaptation to climate change is a required competence. A new optional module, Climate responsibility, will be included in all vocational upper secondary qualifications in the autumn of 2022. In addition, further vocational qualifications and specialist vocational qualifications offer the opportunity to specialise in resource efficiency and environmental education, for example.

Education also aims for transversal and lifelong learning competences. These competences refer to an entity consisting of knowledge, skills, values, attitudes, and will, and they all are required for learning about sustainability and climate responsibility. To make these more consistent and coherent and part of the learning and operating culture, the Finnish National Agency for Education has launched projects to promote sustainability, climate responsibility, and the green transition in education from early childhood to secondary education.

The main aims of the Sustainable Development Certification of Educational Establishments (see links at the end of chapter) are

- To develop the quality of teaching, the learning environment, and the operations of educational establishments,
- To implement education for sustainable development in teaching and the school culture through a comprehensive approach.

Supporting programmes and materials

Free and open websites have been published for teachers and educators working on different levels of educational system. These websites present sustainability and climate change from the perspective of subject teaching at school or school culture and offer photo material, assignments, and general information on sustainability and climate change and sustainability education. For example, the Finnish National Agency for Education unveiled the ‘Sustainable future’ website in 2021. It provides information and support on the various dimensions of sustainability, and how to carry out their training activities for guidance and professionals in education and training, from primary schools to secondary and liberal arts education.

<https://www.oph.fi/fi/kestava-tulevaisuus>

The Teacher’s Climate Guide ([openilmasto-opas.fi](https://www.openilmasto-opas.fi)) was launched in 2016, and it serves teachers working in secondary and upper secondary schools. The Class Teacher’s Climate Guide ([luokanopenilmasto-opas.fi](https://www.luokanopenilmasto-opas.fi)) followed in 2019 and is intended for primary school teachers. It offers information about climate change and climate education, and practical ideas about how to process climate change with primary school children aged between seven and 12. In 2021, the Early Childhood Educator’s Climate Guide was published ([yakanilmasto-opas.fi](https://www.yakanilmasto-opas.fi)), the contents of which are quite similar to the Class Teacher’s Climate Guide, but for use in the context of early childhood education. The guides have been produced by experienced environmental educators in cooperation with organisations working in the field. The work has been funded by foundations and partly by the state environmental administration.

The OKKA Foundation for Teaching, Education and Personal Development maintains the national Sustainable Development Certification of Educational Establishments. The certification system was established in 2004, and it is applicable to comprehensive and upper secondary schools, vocational institutions, liberal adult education, basic education in the arts, NGOs, and children’s cultural centres. The certification system is based on the indicators for a sustainable future, which enable an educational organisation to evaluate how its teaching, operating culture, and management support future-oriented change agency. The indicators and supporting materials can be used to develop an organisation’s activities and a sustainable development programme without a certification target. By March 2022, the OKKA Foundation has awarded the sustainability certificate to a total of 111 organisations.

Eco-Schools, the world's largest sustainable schools programme, has been run in Finland under the name *Vihreä lippu* (Green Flag) for more than 20 years. Currently, more than 350 schools and kindergartens are registered in the programme in Finland. Eco-Schools empowers children to drive change and improve their environmental awareness through the simple Seven-Step framework to achieve the international Eco-Schools Green Flag award. Eco-Schools develops pupils' skills, raises environmental awareness, improves the school environment, and creates financial savings. The Foundation for Environmental Education Finland coordinates the programme in Finland and supports the participants with nine thematic materials. Climate change was included in the themes in 2019.

Many projects, networks, campaigns, or competitions in and between schools support the teaching of sustainable development and climate change; they give pupils an opportunity to use their knowledge and provide teachers with opportunities for in-service training. Environment Online – ENO, RCE Espoo (Regional Centre of Expertise on Education for Sustainable Development), and Finland's Science Education Centre LUMA are examples of such projects (see also Boxes 9.1 and 9.2). More information and examples can be found at the end of this chapter. Many different public service organisations have funded NGOs to visit schools as climate ambassadors and to discuss climate change and ways to curb it. This programme has been actively pursued in the present decade, with good results.

The transdisciplinary URGENT project (2019 to 2023), funded by the Academy of Finland and coordinated by the Finnish Environment Institute, studies how to bring urban and regional planning together with formal education. The “Urban and regional planning with the young generation – collective and intergenerational learning encouraging sustainability transformations” project explores how education for sustainable development can create innovative and scalable transformative pathways to more sustainable societies. The project is establishing a dialogue between schools and planning institutions and is empowering the learning of students, teachers, planners, and researchers. The project co-develops sustainable education and planning and analyses the impact of these new practices in eliciting the progress towards sustainability and sustainability transformation in society at large.

The Just Food programme has developed sustainable school meals with municipalities and schools, involving school students in the planning of climate friendly meals. The programme established a school meal plan with a six-week rotation, that halves the climate impact of school meals compared to regular meal plans. Pupils are seen as the climate friendly food consumers of the future, and their opinions need to be carefully considered. Sustainable culinarians of the future can be guided towards better options with small changes – for example, serving vegetarian options in the same manner as meals containing meat.

Box 9.1

Science Education Centre Luma and National Luma Network

Finland's Science Education Centre LUMA is an umbrella organisation coordinated by the Faculty of Science of the University of Helsinki to bring schools, universities, and industries together. LUMA coordinates cooperation between schools, universities, business, and industry in Finland. It aims to promote meaningful and relevant learning and study and teaching of natural sciences, mathematics, computer science, and technology. A national LUMA network has also been established. LUMA celebrated its tenth anniversary in 2013. Supporting lifelong learning for children and young people centres on activity clubs, summer camps, and the Ksenonit virtual club, Science Day, and the webzine Luova for young people. The activities aim to deliver positive experiences for children and young people in the LUMA subjects. At the same time, natural interaction with the scientific community at the university is fostered. The centre organises a large number of science clubs and camps each year. The international Millennium Youth Camp has been organised annually since 2010. Subject teachers' and primary education teachers' lifelong learning is supported via workshops, summer courses, and an annual LUMA Science Fair. The Nordic Nord Start Climate Change Competition was held by the Finnish Ministry of Education and Culture in the autumn of 2021. The competition was part of Finland's presidency of the Nordic Council of Ministers in 2021 and was organised in cooperation with the LUMA Centre Finland's StarT programme. The competition aimed to gather children, young people, and adults to brainstorm concrete ways of combating climate change.

Box 9.2

Climate Change and Sustainability Education Development Project

The Finnish National Agency for Education is coordinating the Climate Change and Sustainability Education Development project (2021 to 2023). The aim is to provide organisers of early childhood, basic, and secondary education with more focused and integrated support for their environmental sustainability work. The project is based on the basics of the early childhood education plan and basic and secondary degree education curricula and qualifications. Environmental sustainability education is a component of education that supports the lifelong learning process for the sustainable values, knowledge, skills, and practices of individuals or communities. The project will also support the change in the operating culture of primary and secondary schools towards a more ecologically sustainable lifestyle and strengthen knowledge on climate change mitigation. As part of this larger development project entity, the project for the development of sustainable development and the green transition in vocational education and training is being implemented. The main task is to draw up a sustainability and green transition roadmap for vocational education and training in Finland.

9.2.3 Climate change in higher education and climate change training

Universities provide climate change education as part of different degree programmes, including environmental studies, environmental technology, chemistry, chemical technology, and energy technology. Some universities also offer postgraduate studies in climate change. Teaching related to climate change is closely tied to the research in this field.

UASs offer higher education related to climate change in their degree requirements and master's degree programmes, including in environmental engineering, energy engineering, and sustainable development.

Climate University

Climate University is a network of 18 higher education institutions in Finland that develops and fosters climate and sustainability education in higher education. The network has published a set of nine open online courses on climate change, sustainability, the circular economy, sustainability leadership, systems thinking, climate communication, statistical tools, and climate solutions. The teacher network provides peer support to lecturers teaching these topics. Climate University collaborates with the Una Europa European Universities Initiative to provide courses for larger international audiences. Climate University is coordinated by the University of Helsinki.

<https://climateuniversity.fi/>

Climate.now

Climate.now is a multidisciplinary study and teaching module on the basics of climate change. It contains written material, video lectures and interviews, assignments, tests, and a guide for teachers that will help anyone familiarise themselves with the basics of climate change. You can complete the study module independently or as part of your higher education studies. The scope of the whole module is five credits. In addition to teachers and students, the material can be used by companies, other organisations, and the media. Climate.now is part of the Climate University courses and is currently in the curricula of 11 higher education institutions in Finland.

<https://www.climatenow.fi/>

ClimComp (Academy of Finland)

Learning the competences of effective climate change mitigation and adaptation in the education system (ClimComp) is a research project funded by the Academy of Science Finland between 2021 and 2024. In this study, the competences society requires to efficiently mitigate and adapt to climate change, and how these competences are learned and taught throughout the education system, are studied in collaboration with climate and education scientists from the University of Helsinki and the Finnish Meteorological Institute.

INAR International education activities

INAR participates in and coordinates several European Union projects and nationally funded projects to educate experts, teachers, and university students about climate competences. INAR has been especially active in ERASMUS projects with several Eastern European countries. However, due to the situation in Ukraine, all education collaboration with Russian and Belarus is currently on hold. Another active field of international education collaboration is carried out with universities in China, Cyprus, Iceland and Sweden.

Further information

<https://www.atm.helsinki.fi/peex/index.php/portfolio-items/projects-subprograms/?portfolioCats=35>

- Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation (ClimEd; Erasmus+ Programme for Capacity Building in the Field of Higher Education Action)
- Pan-Eurasian EXperiment – Finnish–Russian Earth System Research Network (PEEX-FRESReN)
- Pan-Eurasian EXperiment – Academic Challenge (PEEX-AC, Finnish National Agency for Education; FIRST+, Finnish–Russian Student and Teacher Mobility Programme)
- Modernisation of Doctoral Education in Science and Improvement Teaching Methodologies (MODEST; Erasmus+ Capacity Building in the Field of Higher Education Programme).

Climate issues are also included in the sustainable development teaching given as part of teacher education, which in Finland is a university-level programme for all teachers throughout the education system. Nevertheless, only a fraction of the country's teachers outside the natural sciences has adequate pedagogical expertise in sustainable development and climate change. Various activities to advance sustainable development exist.

Universities, UASs, and several training institutes provide continuing education programmes and vocational training in climate change and related issues, e.g. energy efficiency and environmental technology, for individuals and companies.

9.3 International training activities

Many higher education and research institutions in Finland provide international training and cooperate with research and higher education institutions, as well as governmental institutions in developing countries to support institutional development. Some examples are presented below.

Policies to promote internationalisation in Finnish higher education and research (2017 to 2025) are in the process of being implemented. A Team Finland Knowledge Network has been set up, and the team specialists are now in their duty stations. Other parts of the implementation process will be monitored and developed under the steering processes of higher education institutions and scientific institutions, as well as in the International Forum, which will include participation by various university networks and other stakeholders. The higher education institutions are expected to utilise their research and expertise to solve global problems and consolidate the knowledge base in developing countries. All eligible students, regardless of their nationality, can apply for the higher education degree programmes. Around 20 per cent of degree programmes in higher education institutions are international degree programmes, with English as the teaching language. In 2019, the share of international students in UASs was 6.6 per cent. In universities, it was 6.9 per cent.

Six out of 12 master's degree programmes at the University of Eastern Finland's (UEF) Faculty of Science and Forestry directly target the sustainable use of natural resources and climate change mitigation. During the last decade, these programmes, run in partnerships with European, North American, Russian, Chinese, Brazilian, and Ghanaian universities, have trained more than 100 experts, representing more than 50 nationalities. Furthermore, the UEF Faculty of Science and Forestry trains international climate change specialists in its doctoral programmes in forest sciences and in the biology of environmental change. Furthermore, postgraduate training in Arctic biogeochemistry is part of the Nordic Center of Excellence's "Impacts of a changing cryosphere: Depicting ecosystem-climate feedbacks from permafrost, snow and ice (DEFROST)" network.

The training of experts from developing countries in managing forests and other natural resources is an integral part of the agricultural and forest science programmes at the University of Helsinki. One example is the Viikki Tropical Resources Institute (VITRI), which is part of the Faculty of Agriculture and Forestry; the institute has maintained a strong focus on rehabilitating degraded natural and human-made production systems, including agroforestry systems, and on the various products and services provided by these systems across the different ecological zones in Asia, Africa, and Latin America. More than half the doctoral students come from developing countries such as Sudan, Thailand, and China.

The Sustainable Global Technologies (SGT) programme is a multidisciplinary educational programme at the Aalto University School of Engineering. The SGT programme aims to increase awareness, education, and research in the fields of sustainability, development, and technology. It offers a special module in Sustainable Global Technologies at Aalto University. The SGT programme is an example of a UN Habitat Partner University Initiative;

it is also collaborating with the United Nations Environment Programme (UNEP). Aalto University is also one of the partnering universities in the Environmental Pathways for Sustainable Energy Services (SELECT) master's degree programme. SELECT is part of the Erasmus Mundus Programme, an EU-funded cooperation and mobility programme that aims to enhance the quality of European higher education and to promote dialogue and understanding between people and cultures through cooperation with third countries. SELECT will be extended to include a doctoral programme as well.

Training activities in developing countries are also implemented through development cooperation financed by the Ministry for Foreign Affairs. The main financing instruments are the Institutional Cooperation Instrument (ICI), Higher Education Institutions Institutional Cooperation Instrument (HEI-ICI) and the Academy Programme for Development Research (DEVELOP). Details about these instruments, as well as lists of projects funded between 2017 and 2021, are provided in Chapter 8.4 (Capacity building in developing countries).

At the University of Eastern Finland (UEF), the Faculty of Science and Forestry coordinates and participates in various education and research projects that target capacity building in the areas of sustainable forest use and environmental studies. Currently, projects are being carried out in West Africa (Sierra Leone and Burkina Faso), Venezuela, Ghana, Uganda, India, and Kenya. These projects deal with bioenergy issues and carbon sequestration and focus on strengthening climate expertise through curriculum development at local universities, for example. VITRI is an active participant in the development of the forestry sector in Sudan, Kenya, Ethiopia, Thailand, Indonesia, and Laos.

The Finnish Meteorological Institute (FMI) has coordinated several development cooperation projects funded by various development funding institutes such as the World Bank, Asian Development Bank and the Ministry for Foreign Affairs of Finland (MFA). Many of these projects are funded using the Institutional Cooperation Instrument (ICI) of MFA, which enables close cooperation with partner institutes focusing especially on human capacity building. The projects the FMI coordinates always include a strong training component, and the subjects of the training typically include adaptation to climate change. For example, capacity building has covered adapting to the changes in the intensity and frequency of extreme weather events that require the extensive development of early warning services. The sectors, in addition to the partner institutes, that benefit from the training include traffic, agriculture, health, and energy production. The FMI also trains researchers from other countries, either on site in their own countries (for example, in Africa and Central Asia) or in Finland. More information on climate-change-related capacity building projects being carried out in developing countries is presented in Section 8.4.

The Nordic office of the Energy and Resources Institute (TERI, India) was established in 2012 at the UEF to promote collaborative activities between organisations in the Nordic region and India on issues related to sustainable forestry, the bioeconomy and renewable energy. The TERI Nordic office provides a platform in which academic and business communities can interact with each other in joint research collaboration and the transfer of technological expertise.

Finland participates actively in EU initiatives which promote international cooperation in exchanging and developing good practices in the fight against climate change. In the EU Programme for Education, Training, Youth and Sport (Erasmus+), an important priority is “Environment and fight against climate change”, which has been the focus of many international projects and mobilities implemented within the Programme with Finnish coordination. For example, the whole school approach, education for sustainable development in general and the training of real estate energy efficiency has been developed in international cooperation.

Finnish higher education institutions participate actively in Erasmus+ Capacity Building in Higher Education projects supporting the development of higher education in countries outside Europe. The CBHE projects support the relevance, quality, modernisation and resilience of higher education in the partner countries and promote the general priorities of the European Commission, such as the Green Deal, digitalisation, sustainable growth, peace and security.

A new strategic partnership programme is the Digital climate change curriculum for architectural education: methods towards carbon neutrality, implemented by University of Tampere.

Finland has participated actively in the quest for ways to decrease the carbon footprint of the Erasmus+ Programme, using the Account, Reduce and Compensate principle. Between 2019 and 2021, the Finnish National Agency for Erasmus+ coordinated an international Working Group with representatives of the European Commission and some other National Agencies of Erasmus+. Its main purpose was to account for the carbon footprint of the whole programme and analyse various compensation scenarios. Moreover, proposals and recommendations were made to steer the choice of transport means to decrease the share of flights, including actions related to programme design and management, as well as awareness raising. The result is available in the publication: [Feasibility study on compensation scenarios for the new and greener Erasmus+ programme 2021–2027](#).

9.4 Public awareness

According to the Finnish Climate Barometer 2019 survey, Finns wished to see solutions to the climate crisis in the priority themes of the next Government term and Finland's Presidency of the Council of the EU in 2019. Growing numbers of Finns have also changed their own behaviour to mitigate climate change.

Four out of five Finns consider that urgent action is required to mitigate climate change. The future Government should introduce even more policy measures to effectively mitigate climate change than people thought before the previous general elections (an increase in the share of respondents from 52 per cent in 2015 to 70 per cent in 2019). Seventy-five per cent of the respondents want the EU to serve as an example in climate change mitigation, independent of how this may affect the EU's competitiveness, and two out of three Finns consider that Finland should be a trailblazer in the introduction of new solutions that help reduce emissions. Concerning general elections, 44 per cent of Finns would vote for a candidate active in climate change mitigation.

Three out of four consider that one of the principles applied in taxation should be that those who cause emissions also pay for them, which means taxation can be reduced elsewhere. Almost half of Finns think taxes on fossil fuels and meat and milk products should be increased. As many as a third of Finns would be prepared to ban the sale of new petrol- and diesel-powered passenger vehicles in 2030.

The concern about the impacts of climate change is already reflected in everyday choices. In 2015, only 29 per cent of respondents reported that they had changed their own behaviour because of climate change; in 2019, the percentage was 41 per cent.

More than half of Finns have reduced electricity consumption, and almost half the population are buying less for climate reasons. About a third have calculated their own carbon footprint, and a quarter intend to compensate for the emissions they are causing in the next few years. Well over half the respondents wish to have more information about climate change and advice in making climate-smart choices.

The media coverage of climate change has been extensive in Finland. Partly as a result of the media debate, the general public considers some issues serious environmental problems; some risks are amplified, while others are attenuated. Peaks in climate coverage have been caused by international policy negotiations such as the Paris Climate Change Conference in 2015 and mild winters. Other contributing factors have included the release of EU and government policies on emissions reductions, releases of major scientific reviews, expressions of concern by key actors, and the related debate on energy policy.

As an example of public awareness and information regarding climate policy actions: the Finland's Eighth National Communication under the United Nations Framework Convention on Climate Change was released to an open public opinion in 2022. A similar procedure was carried out with the previous national communication.

Box 9.3

The Year of Research-Based Knowledge 2021 in Finland

The Year of Research-Based Knowledge was a joint initiative organised by the Ministry of Education and Culture, the Academy of Finland and the Federation of Finnish Learned Societies. Its aim was to make research-based knowledge even more visible and accessible and to intensify the collaboration between organisations working with research-based knowledge.

The theme year gathered actions and events in a programme that gave a comprehensive view of research-based knowledge and its role in the wellbeing of individuals and functioning of society, for example.

There were around 440 separate actions and events under the umbrella of the Year of Research-Based Knowledge. Dozens of the actions and events were directly related to climatic issues or environmental matters.

The Year of Research-Based Knowledge increased the visibility of various sources of knowledge, including statistics, reports and analyses, as well as highlighting the fundamental nature of knowledge, where knowledge is updated as new research results emerge.

The theme year was aimed at everyone living in Finland, as well as decision makers and business and industry. A specific aim was to provide children and young people with creativity, inspiration and hope for the future.

How was the programme built?

The programme of the Year of Research-Based Knowledge consisted of actions and events produced by network partners.

Any organisation, association, or group working with research-based knowledge could apply to become part of the programme with their event, act, campaign, exhibition, artwork, intervention, or development project.

The theme year's coordination provided the network partners with a collaboration platform to increase national visibility and enable new partnerships.

The partners implemented the year's objectives alongside their own goals and raised awareness of the year and its programme among their stakeholders.

The theme year's coordination, communication and collaboration contributed to implementing resources more efficiently and increasing the visibility and accessibility of the events and actions at local and national level.

9.4.1 Climate change communication

Communications on climate change are handled by many different organisations. Cooperation is therefore needed to ensure actions are well coordinated. Since 2010, the Ministry of the Environment has had the official responsibility for coordinating the cooperation on climate change communications. The steering group for climate change communications was appointed for its fourth term in 2022. The steering group is composed of all relevant ministries (the Ministry of Agriculture and Forestry, the Ministry of the Environment, the Ministry of Economic Affairs and Employment, the Ministry for Foreign Affairs, the Prime Minister's Office, and the Ministry of Finance), research organisations (the Finnish Environment Institute SYKE, the Finnish Meteorological Institute FMI, the VTT Technical Research Centre of Finland, and Natural Resources Institute Finland Luke), regional organisations (Centres for Economic Development, Transport and the Environment, and the Association of Finnish Local and Regional Authorities), the Finnish National Agency for Education, Business Finland, the Finnish Innovation Fund Sitra, Motiva (see Section 9.4.2) and Demos Helsinki. In recent years, the composition of the steering group has been expanded as the number of organisations in which climate issues have become prominent, and cross-cutting themes in communications continue to grow. The aim of the cooperation is not only to coordinate climate- and energy-related communication but also to carry out common communication projects and share best practices and expertise. The cooperation makes it possible to consider climate change communications from a wider perspective than that of each individual organisation.

In 2019 the steering group conducted a Climate Barometer: the group designed a survey on Finnish citizens' views concerning climate change issues. It was conducted by KantarTNS before the last parliamentary elections. Some key results are presented above in Section 9.4. The results were widely covered in the media, and they have since often been referred to in different kinds of presentations, publications and the media. The previous Climate Barometer was conducted in 2015.

The various organisations in the group have organised national events in connection with publication of various IPCC reports that have been open to all. The group has communicated on the content of the IPCC reports through various channels, including press releases, blogs, infographics and social media (see an example in Figure 9.2). The reports have been widely noted in both traditional and social media. The work on raising public awareness of the IPCC assessment reports has been rewarded by the Institute of the Languages of Finland as an exemplary work to make climate change and related Government policies more understandable and interesting for the general public. Infographics produced from each IPCC report can be freely used by anyone. In August 2020, the messages of the IPCC 1.5-degree report were widely covered in the Finnish media. An open event was organised and streamed nationwide, connecting the

report's core messages to national and international climate policy. To help media and stakeholders spread the report's messages, its infographics were published. They can be freely used by anyone.

The steering group on climate change communications participated in producing the content for a country brand narrative about Finland as a climate actor, prepared by the Ministry for Foreign Affairs with other ministries and stakeholders in 2021. The group also participated in the production of a slideshow that presents practical examples of Finnish climate actions. The material is intended for both climate change communications and discussions of climate actions as part of official duties.

At the end of 2021, the Ministry for Foreign Affairs published the “Until We Act” communications concept and an associated website, based on the country brand narrative about Finland as a climate actor and the related slideshow. The steering group on climate change communications also participated in designing the concept and website.

The aim of the cooperation is not only to coordinate climate- and energy-related communication but also to accomplish common communication projects and share best practices and expertise. The cooperation makes it possible to consider climate change communication from a wider perspective than that of each individual organisation.

Encouraging the public to participate in the planning of Finland's climate policies continued in 2016 with an open online platform, energiajailmasto.fi, on which anyone, regardless of their background, could comment on the planned climate strategies and measures of emissions reduction.

Nominated by the Finnish Ministry of the Environment for the first time at the end of 2011, the interdisciplinary and independent Climate Change Panel of researchers and academicians aims to enhance communication between science and politics in issues related to climate change (see Section 4.2.2 for the role of the panel in policymaking and Box 8.2 for its research activities). The Finnish Climate Change Panel has actively participated in the public debate by releasing statements, organising discussions, developing consumer tools to support climate-friendly decision making (see Box 9.4), and interacting with the media, decision makers and other stakeholders.

The Finnish Innovation Fund Sitra's work on promoting sustainable lifestyles with practical suggestions for positive changes, a lifestyle test, surveys, development programmes and information compiled on the environmental impacts of everyday life has led to the creation of a multinational EU-funded PSLifestyle project, which will develop an online service for European citizens with personalised and culturally relevant suggestions through which people can build their own sustainable good life plans based on their carbon footprint.

Box 9.4

Cost and Emissions Calculator for Cars

The Cost and Emissions Calculator for Cars (“Autokalkulaattori” in Finnish) is an online calculation tool. The tool was developed by the Finnish Climate Change Panel and the Finnish Environment Institute. It helps consumers choose which type of car to buy, based on lifecycle emissions and costs. The tool calculates cumulative greenhouse gas emissions and adds up purchasing and running costs over a car’s lifetime. The purpose of this tool is to help compare both costs and emissions at the same time to help consumers make an informed decision.

The emissions and cost calculations are based on default settings based on information from car manufacturers, best available scientific knowledge and the user’s own estimation of kilometres driven per year. The user can adjust all the settings. For example, the default setting for the emissions factor for electricity is the average emissions factor for the Finnish grid, but it can be altered if the source of electricity is known. The results of the calculation are shown in graphs and charts, which adjust in real time when elements of the calculations are changed, and up to six different car scenarios can be compared at the same time.

Many of the Government organisations provide training for various stakeholders, both independently and through the Steering Group for Climate Communications. For example, the Finnish Meteorological Institute has organised annual training about climate change for journalists since 2006. In 2020 and 2021, the training was organised virtually, enabling even wider participation of journalists from anywhere in Finland. To date, around 500 journalists have already participated in the training. The participants are journalists covering a wide range of subjects such as the environment, politics, economics, and technology.

One result of the cooperation between various organisations is the national web portal on climate change, [Climateguide.fi](https://climateguide.fi), which was launched in 2011. The main language of the portal is Finnish, but much of the information is also available in Swedish and English. The website provides scientific background information on various aspects of climate change, as well as a tangible means for mitigation and adaptation. [Climateguide.fi](https://climateguide.fi) features web articles, checklists, observational and modelled data, mapping tools, interactive visualisations, videos and learning assignments. The website raises awareness about climate change and its implications for Finland and supports society and citizens in mitigating climate change and adapting to it. It also serves as a platform through which key Finnish research institutions and projects can disseminate their information in a user-friendly way. [Climateguide.fi](https://climateguide.fi) is especially targeted at the general public and decision makers and experts in various sectors, students and teachers, and the media. The FMI, SYKE, and Luke share responsibility for the content of the web portal, as well as for updating and further developing it. There are also plans for more research institutions to join.

The national IPCC working group coordinates and presents Finnish standpoints in the IPCC reports. It aims to raise awareness about the IPCC's work in Finland and the Finnish contribution to it. The communications department of the FMI is responsible for communications about the IPCC's activities and works in close cooperation with the communications department of the Ministry of the Environment. The most important channels are press releases and conferences, seminars for decision makers, and training programmes for journalists. These are put together in cooperation with the Finnish scientific community.

The Climate Policy Round Table was launched in February 2020, and it met for the first time in May 2020. Due to the Covid-19 pandemic, the start of the Round Table was delayed and meetings are held remotely for the most part. The Round Table discusses key Government initiatives and legislative proposals aimed at carbon neutrality, as well as roadmaps, especially from the perspective of a fair transition.

The purpose of the Round Table is to create a common understanding of how Finland can make a just transition to a carbon neutral society by 2035, and the discussion of the Round Table has been fruitful for this purpose. A good overview of different opinions of several sectors of society has been gained from the discussions about a carbon neutral society, which can be utilised in official preparation, as well as policymaking. The material of the meeting is distributed to the Government servants who are responsible for the issue discussed, and the outcomes of the meeting are presented to the Ministerial Working Group on Climate and Energy Policy.

The Prime Minister chairs the Round Table. In her absence, the Minister of the Environment and Climate Change usually chairs the meeting. All the Vice Chairs usually participate in the meetings as well. The selection of the members was decided by the Ministry of the Environment in close cooperation with the Prime Minister's Office. The Prime Minister's Office officially conducted the process of appointing the members. The Round Table consists of four Vice Chairs, 20 members, and three Representatives of Expert Bodies.

The starting point for setting up the Round Table was that it would be a high-level confidential discussion forum. The Round Table is therefore limited to a certain number of persons and entities. The Round Table uses the Chatham House Rule, which supports a confidential atmosphere (e.g. direct quotations from another member's speech are not allowed in communication). The selection was made to ensure the Round Table represented various actors or sectors of society. From a regional and social perspective, the composition of the Round Table recognises the active role of young people in climate issues. One of the Vice Chairs represents the Finnish National Youth Council, Allianssi, and one of the members represents the Agenda 2030 Youth Group. The Round Table also includes representatives of the Sámi Parliament and

municipalities, who will play an important role in achieving Finland's climate neutrality target by 2035.

Preparations are made in cooperation with Special Advisers to the Ministers (e.g. meetings, workplans, etc.). The youth representative and the representative of industry are involved in planning the meetings and developing the general work of the Round Table with the Secretariat.

Finland has also had a national Citizens' Jury on Climate Action. The national Citizens' Jury contributed to the assessment of the fairness of the climate actions. The Jury formulated a considered public opinion on 14 different climate measures related to food, housing and transport. The outcomes of the Jury were introduced to the Round Table's meeting in May 2021.

The results of the Jury were handled by the Working Group for Medium-Term Climate Change Policy Plan. The working group consists of Government officials from several ministries.

The statement of the Jury has been documented as part of the Medium-Term Climate Change Policy Plan. From the point of acceptability, the Jury's and other key initiatives that have emerged from the consultations (e.g. Sámi and youth consultations) are presented in the plan, and it is explained how they have been taken into account.

The final report about the Citizens' Jury was completed at the end of June 2021. The main findings of the Citizens' Jury included that the new Climate Policy Plan should consider the economic impact of the actions on individuals and different socioeconomic segments, as well as regional equality. The Jury also hoped that it would be possible to live and take part in everyday activities everywhere in Finland in future. In the general observations, the Jury also highlighted the allocation of tax revenues in public administration and municipalities to climate-friendly traffic, housing, and food, as well as the importance of steering by information so that all citizens have an adequate knowledge of the impacts of climate actions and e.g. different types of allowances and deductions.

In addition, the Ministry of the Environment has been testing several methods and innovations to engage in reforms to the Climate Act, utilising a human-rights based inclusive approach to consultation and working with a range of external partners. Methods include an online survey in six languages (English, Swedish, Finnish and three Sámi languages); consultations in different cities with the public; consultations with stakeholders (e.g. municipalities, legal experts); consultations with young people in schooltime via the all-Youth project; dialogues with journalists; online discussions using the Timeout platform, meetings with climate activists in small groups; hearings; and workshops with Sámi youth in Finnish and Sámi. In October 2020, human rights-related discussions were planned through the BIBU research project.

The implications of climate change have a particularly strong influence on Arctic regions and indigenous peoples such as the Sámi. The Government has therefore also officially negotiated with the Sámi Parliament in relation to the Climate Act. Language rights have been protected in the negotiations. There have also been online consultations in the three Sámi languages.

The Ministry of the Environment is preparing a climate mid-term plan for 2035. In the online questionnaire related to the climate plan, there was a total of more than 18,000 participants between January and February 2021. The aim was to ask what climate policy measures citizens found fair and just. The main findings included that citizens preferred climate measures that included financial incentives and information support.

Youth consultations

The Agenda 2030 Youth Group was established in the spring of 2017 under the Finnish National Commission on Sustainable Development led by the Prime Minister. The Agenda Youth Group has two aims: to serve as an advocate for the goals and participate in the national planning and implementation of the Sustainable Development Goals. The Finnish Agenda 2030 Youth Group is composed of less than 20 people aged between 15 and 28 from all over Finland and with a variety of backgrounds.

The Youth Group is invited to various stakeholder meetings in the ministries, and it attends workshops, discussions, and events on sustainable development. The members serve as advocates and participate in the dialogue and debate on the goals in national contexts. For example, the group has organised a panel session for presidential candidates on climate change and a youth climate summit in March 2019, which involved 500 young people. As a part of their summit, they prepared a declaration on climate change, which was sent to Members of Parliament.

Finland has also supported the World Summit of Students for Climate, which has strengthened the participation of young people in several countries and created a considerable amount of new carbon sinks. The World Summit of Students for Climate took place between 29 May and 5 June 2019 in Finland. The summit was initiated and organised by ENO Schoolnet in cooperation with the cities of Helsinki and Joensuu, the municipality of Liperi, the Ministry of the Environment, and the Ministries of Agriculture and Forestry, of Education and Culture and for Foreign Affairs. One hundred and thirty-five students and 100 teachers from 70 countries were involved. The students discussed climate change and forests based on their preliminary assignment, and they committed to start planting trees (tree planting and tree adopting schools). They voted on the actions they could take as students and created the Climate Action Plan 2019–25. Teachers had workshops in the field of education, the natural sciences and the circular economy, for example. The ultimate goal is to tie three million tonnes of carbon dioxide by 2025. The

summit was endorsed by the President of the Republic of Finland, Sauli Niinistö.

Finland has also funded the 2020 Earth School platform (UNEP and Ted-Ed), which includes an extensive amount of environmental education materials. Several Finnish environmental educators were involved in creating content.

There have also been separate consultations for young people between 2020 and 2021 in cooperation with researchers and NGOs. Youth Climate and Nature Summit was held in Finland in October 2021, gathering hundreds of youth to discuss climate action.

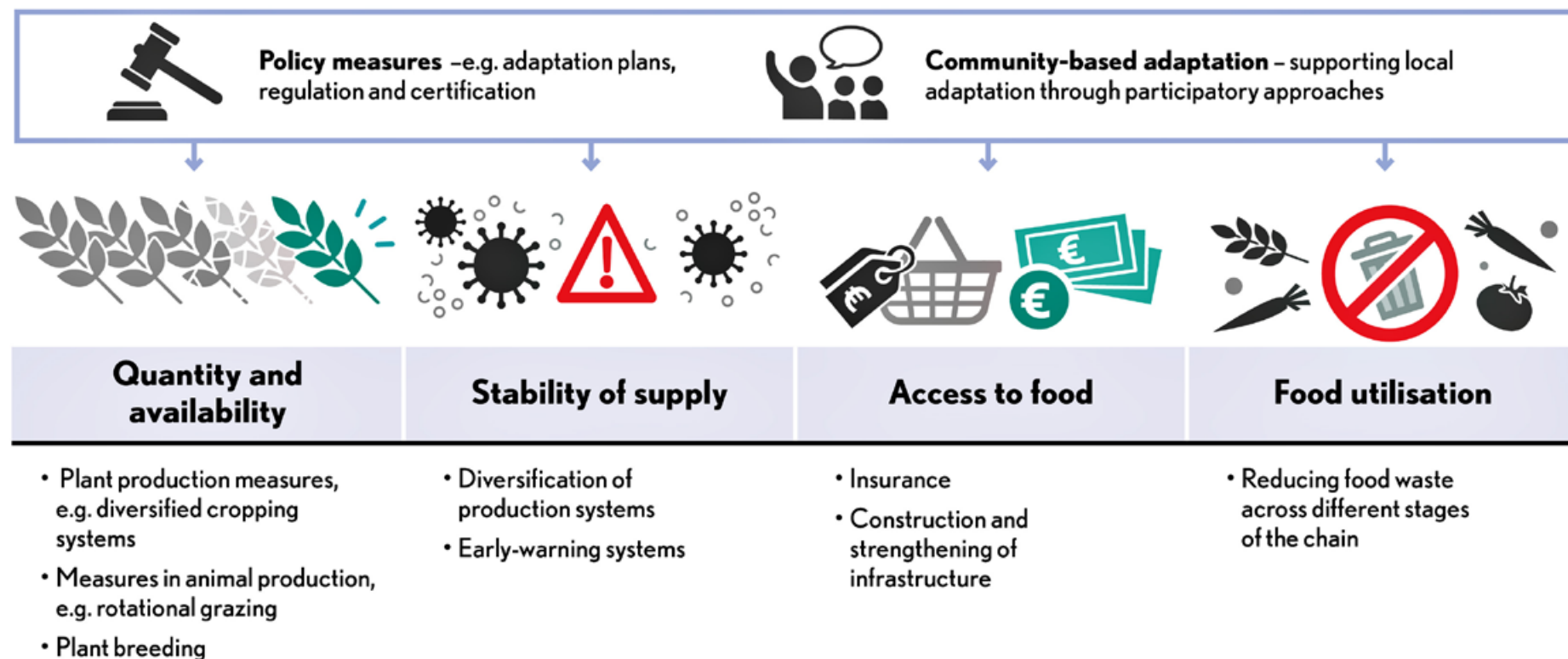
In addition, children and young people themselves have been active in many forms. One of the most visible is the rap group Biolapset, which includes children between the ages of eight and 14. They have sung for the climate at various public events.

Figure 9.2

Food security can be supported through various adaptive measures around the world – an example of the infographics made based on the results of the IPCC’s Sixth Assessment Report and published in the Finnish climate change portal Climateguide.fi.

Food security can be supported through various adaptive measures around the world.

Many adaptation measures have synergies with climate change mitigation and sustainable development. However, the effectiveness of the adaptation measures will be limited if global warming exceeds 1.5 degrees Celsius.



Based on the findings of the IPCC’s 6th Assessment Report, Working Group II. © Ministry of the Environment, Finnish Environment Institute and Natural Resources Institute Finland, 2022 Climateguide.fi



9.4.2 Raising awareness about energy efficiency

Communications on energy efficiency is mainly the responsibility of two ministries, the Ministry of Economic Affairs and Employment and the Ministry of the Environment, and of other Government bodies, research institutes, and state-owned organisations, e.g. Motiva. Motiva is a fully state-owned sustainable development company that encourages the efficient and sustainable use of energy and materials. Motiva provides information, solutions, and services to public administrations, businesses, municipalities, and consumers to enable them to make resource-efficient, effective, and sustainable choices. Motiva contributes to energy education through specific projects and campaigns in schools and enhances the energy competence development of professionals in various sectors through online training materials. Motiva also coordinates several communications and awareness-raising activities.

Energy Awareness Week

Motiva has successfully run the National Energy Awareness Week and the specific energy awareness week for primary schools since 1996. The theme week in October has become an established annual event, during which companies, municipalities, schools, and other organisations and households concentrate on undertaking energy actions and promoting the sustainable use of energy – voluntarily. The week offers a great opportunity to act on and to communicate about mitigating climate change, promote energy efficiency, and make sustainable choices.

Motiva provides Energy Awareness Week participants with tools, tips, informative materials, and support for communications. Motiva communicates on the theme week and participants' actions through its communication channels, especially on social media. The campaign reaches hundreds of thousands of Finns every year. Energy Awareness Week is supported by the Finnish Energy Authority.

The rational use of energy and materials and understanding their meaning are an important civic skill that is good to teach children from an early age. Along with increased awareness and positive attitude changes, one of the main objectives of the Energy Awareness Week for Schools is simply to encourage pupils to act on their knowledge. The theme week also aims to spread energy efficiency information and activities to homes. The Energy Agent Adventure is a competition for school children, where classes compete for two weeks to see who succeeds in doing the most tasks that save energy in school and at home. The top five classes win prizes. Local energy companies and municipalities support the schools by sponsoring the Hey, everything is working! material package and Children's Energy Books for schools. Tens of thousands of children learn about energy during the theme week every year.

Advice and guidance to consumers on sustainable choices

The nationwide consumer energy advice service provides information and ideas on how to save energy, the environment, and the climate at home. The target group of the advice is consumers, housing associations, municipalities, and small and medium-sized enterprises (SMEs). The core of the activity is to provide high-quality and reliable information and tools to support their energy decisions. Regional energy advisers in all Finnish provinces provide unbiased and free information about how to increase energy efficiency and use of renewable energy through online energy advice on Facebook @ Asiaaenergiasta, by email, and through the Energy Advice Phone Service.

Motiva coordinates the consumer energy advice efforts by providing advisers with supportive services such as a website and Facebook page, training webinars, tools, marketing, and promotional and networking support. The network of regional advisers meets annually to exchange experiences and best practices and for training. The work is supported by a broad-based advisory steering group chaired by the Energy Authority. The Finnish Energy Authority funds the activities.

https://www.motiva.fi/koti_ja_asuminen/kuluttajien_energianeuvonta

Mobility management

The Finnish Transport Agency Traficom supports the development of smart mobility through annual state grants for mobility management, which are intended for municipalities, local authorities, and non-profit organisations. Grants can be applied for a variety of projects that aim to influence people's travel choices and strengthen sustainable mobility habits, either through the provision of information or service experiments. In 2022, 35 projects were awarded grants totalling around EUR 1.21 million. Traficom also supports the European Mobility Week in Finland, which activates municipalities and other actors to spread information on sustainable mobility and involve citizens through various activities.

<https://www.liikkujanviikko.fi>

Advice on home renovation

The advice network on the renovation of buildings, managed by the Ministry of the Environment, gives advice to homeowners, tenants, housing associations, and real estate managers. The network provides advice and online tools, for example, for finding professional service providers and the proper recycling of construction materials. A key focus of the advice is to improve the energy efficiency of the building when it is renovated. The advice is free of charge. The ministry arranges an annual renovation advice networking event for exchanging experiences, best practices, and common challenges, and for networking.

<https://www.ymparisto.fi/fi-fi/rakentaminen/korjaustieto/korjausneuvonta>

Home repair advice for the elderly over 65

The Finnish Association for the Welfare of Older People has regional home repair experts who provide home repair advice for the elderly, e.g. by helping veterans and older people to assess and plan home renovation and apply for repair allowances. If necessary, they also help in finding contractors to carry out the repairs. The repair advice is provided free of charge. A free phone service is available on weekdays.

<https://vtkl.fi/toiminta/korjausneuvonta>

Photovoltaics for homes

Photovoltaics for homes (Aurinkosähköä kotiin) is an annual nationwide campaign (March to September) whose aim is to increase Finns' knowledge of photovoltaics and its suitability for houses and housing associations, and to provide information on procurement costs and service providers through an online comparison service. The campaign website provides reliable and unbiased information on photovoltaics and its procurement.

The service enables homeowners and housing companies to compare and procure PV systems between preapproved offers by different PV system providers. The service provides an online tool for bidding. The service provides: 1) advice on solar energy – the benefits of solar electricity; information on systems; a calculator for sizing; step-by-step instructions for procurement; 2) preapproved offers from PV system providers; 3) a tool for bidding for single family houses and housing companies, incl. small businesses. A national service since 2018, operated by Motiva, supported by the Energy Authority.

<https://www.aurinkosahkoakotiin.fi>

9.4.3 Local activities

In Finland many municipalities have a climate strategy or are in the process of preparing one. These municipalities have incorporated climate change mitigation into their practices (see Section 4.2.5).

The municipalities play a decisive role as intermediators of information regarding attitudes towards climate issues and enabling changes in people's lifestyles. Many municipalities are committed to reducing their greenhouse gas emissions and encouraging citizens to contribute to combating climate change.

Carbon Neutral Municipalities Network

The Towards Carbon Neutral Municipalities (Hinku) network brings together municipalities, businesses, citizens, and experts to create and carry out solutions to reduce greenhouse gas emissions. The municipalities involved are committed to reducing greenhouse gas emissions more extensively and rapidly than EU targets require. The network aims to create solutions that have economic and social benefits, as well as environmental advantages. There are now more than

80 Hinku municipalities and five Hinku regions in the network. The Hinku municipalities are home to 2.2 million inhabitants, covering about 40 per cent of the Finnish population. The municipalities in the network are committed to an 80 per cent reduction in greenhouse gas emissions from 2007 levels by 2030. The tools offered to the partners are based on research and aim to deliver scientific knowledge and expertise to practise and excel in forming a climate-smart Finland. The tools include carbon footprint calculators and the sharing of best practices. The results are encouraging: climate emissions in Hinku municipalities decreased between 2007 and 2020 by 36 per cent. The Hinku network is coordinated by the Finnish Environment Institute SYKE.

<https://www.hiilineutraalisuomi.fi/en-US/Hinku>

Finnish Sustainable Communities Network

Another indication of the determination at the local level is the FISU network – Finnish Sustainable Communities. FISU municipalities form a group of forerunner communities committed to becoming carbon neutral and waste-free, as well as curbing overconsumption by 2050. The municipality, businesses and other local operators build a common vision and roadmap to achieving these goals. They identify new ways of working and cooperation. The idea is to strengthen the municipal and regional economy, create jobs and promote sustainable wellbeing. The network is coordinated by the Finnish Environment Institute SYKE and Motiva, which together form a service centre in support of the FISU municipalities. The service centre conveys topical information and competence to the municipalities and other interest groups and promotes the FISU network in the national media and in events related to the theme of best practice in pioneering, provides reliable information on new opportunities and develops practices in a peer-to-peer network.

<https://www.fisunetwork.fi/en-US>

Climate Information Advisory Service

The Climate Information (Ilmastoinfo) advisory service, delivered by the Helsinki Region Environmental Services Authority (HSY), advises residents and housing associations in the Helsinki metropolitan area. The advisory service help in a wide range of energy issues; matters related to the use of equipment and properties, energy renovations of buildings, or on the transition to renewable energy. Climate Information runs housing company energy expert training courses focusing on the basics of a housing company's energy consumption and energy efficiency, also as online training at <https://koutsi.hsy.fi/>. The advisory services are free of charge.

<https://www.hsy.fi/ilmastoinfo/>

Industrial Symbiosis in Finland

FISS (the Finnish Industrial Symbiosis System) is a concrete tool for promoting the circular economy. FISS is a collaborative approach that helps companies

and other actors make better use of resources and generate new business. The FISS model is based on the active promotion of symbiosis, i.e. facilitation and co-development. The goal is also to increase the value added of materials and create new competitive products and services. FISS aims to promote new business opportunities, the reuse of waste, and reducing the use of natural resources. The goal is also to advance the implementation of a waste hierarchy. FISS activities promote the resource efficiency of various actors in the regions and can be seen as an important tool in regional development and the economy. Motiva coordinates FISS at a national level, and the identification and promotion of symbioses is done at a regional level, where regional organisers work with companies and help them.

<http://www.industrialsymbiosis.fi/>

Active and Sustainable Journey to School

Active Journey to School (Fiksusti kouluun) is a programme to promote more sustainable and active school journeys to reduce traffic-related emissions and promote physical activity on the way to school. The programme aims for better traffic safety, an enhanced and sustainable physical activity culture in schools and teaching, support for strategies, and operating models for active and sustainable journeys to school. The programme offers information and advice for the planning and implementation of smarter journeys to school. The programme has been running since 2018. Fiksusti kouluun is a joint programme of the LIKES Research Centre for Physical Activity and Health, the Network of Finnish Cycling Municipalities (Pyöräilykuntien verkosto), and Motiva to promote sustainability and physical activity in school journeys. It works in cooperation with the Schools on the Move programme. The programme is funded by the Ministry of Education and Culture and the Finnish Transport and Communications Agency Traficom.

<https://fiksustikouluun.fi>

Sustainable Commuting to Work

The Sustainable Commuting to Work (Fiksusti töihin) website provides facts and tips for more sustainable commuting to work, as well as for transitions during the workday. Road transport creates a significant part of greenhouse gas emissions and other environmentally harmful emissions such as small particles and hydrocarbons. More sustainable commuting is part of workplace responsibility. Everyone can also reduce emissions on their own commute. Sustainable mobility and commuting cover several options: walking and cycling whenever possible; the use of public transport for longer commutes; choosing electric and gas cars when driving is essential; and diverse mobility, wellbeing, and climate-friendly choices. The website provides information on sustainable commuting and mobility, tips for employers on how to encourage employees to commute in a sustainable way, tips for employees for better wellbeing through smart commuting, examples, and best practices. The project also provides

webinars and events, materials, and publications and newsletters. The project is funded by the Finnish Transport and Communications Agency's Traficom and Moving Adult programme. The project is coordinated by Motiva.
<https://www.fiksustitoinhin.fi/>

9.4.4 National Policy Implementation Activities

Energy Efficiency Agreements

Finland is one of the few European countries where voluntary means like the voluntary Energy Efficiency Agreement scheme, have proven to work and yield profits. Energy savings and energy efficiency have been improved through agreements drawn between the Government and industrial/municipal associations since the 1990s. Energy efficiency agreements are an important part of Finland's energy and climate strategy and are the primary means of promoting energy efficiency in Finland. The agreements implement and monitor the implementation of the energy efficiency obligations set by the EU Energy Efficiency Directive. A wide range of companies in the industrial, energy, and service sectors, as well as municipalities, have entered into agreements. Their energy consumption covers about 60 per cent of Finland's total energy consumption. The current contract period is valid until 2025.

Energy efficiency agreements have proved their effectiveness. The measures implemented by the nearly 600 companies and 112 municipalities and associations of municipalities that joined the voluntary energy efficiency agreements between 2017 and 2020 improved their energy use by a total of about 8.9 terawatt hours per year at the end of 2020. The savings realised correspond to the annual energy consumption of almost 450,000 electrically heated detached houses. The annual savings achieved in 2020 correspond to about 2.5 per cent of Finland's total energy consumption in 2020.

The companies and municipalities that have joined the agreement invested a total of approximately EUR 764 million in energy efficiency between 2017 and 2020. Over the four years, the organisations that have joined the agreement have taken a total of almost 15,000 individual energy efficiency measures. The measures implemented between 2017 and 2020 reduced the total annual CO₂ emissions of the companies and entities that joined the agreements by approximately 2 million tonnes and their annual energy costs by more than EUR 350 million. Between 2017 and 2020, the Ministry of Employment and the Economy supported the energy efficiency investments of companies and entities that have entered into agreements in the business, municipal, and real estate sectors with a total of EUR 77.6 million. Support has been provided for 764 projects that would not otherwise have taken place. The agreement scheme is managed by Motiva, commissioned by the Energy Authority.
<https://energiatehokkuussopimukset2017-2025.fi/en/>

Energy Performance Certificate Advice Service

The Energy Performance Certificate (EPC) is a tool for comparing and improving the energy efficiency of buildings in sales and rental situations. The energy performance certificate was introduced in Finland in 2008 in all new construction, and in sales and rental situations of large buildings and new detached houses in 2009. Motiva provides information about and examples of energy performance certificates, organises webinars for qualified energy certificate issuers, and an advice service on energy performance certificates to homeowners, housing companies, and other interested stakeholders. The advice service covers a weekly phone service and an email service, and a FAQ listing. The law on the energy certification of buildings implements the EU's Energy Performance of Buildings Directive (EPBD). The energy performance certificate makes it possible to compare buildings based on their properties. As of 1 June 2013, an energy performance certificate is also required in connection with the sale and rental of an old detached house. The energy performance certificate is valid until it is replaced by a new one, but for a maximum of ten years from the date of issue. The Housing Finance and Development Centre (ARA) maintains a register of qualified energy certificate issuers. Motiva Oy provides information and an advice service on issues related to energy performance certificates, commissioned by the Ministry of the Environment, which is responsible for the content of and general guidance on the law.

<https://www.motiva.fi/energiatodistus>

Wood Construction Advisory Service

The Public Wood Construction Advisory service provides municipalities with free expert advice on wood construction issues. The aim of the advice service is to increase the use of wood in public sector construction by increasing the knowledge and interest in wood construction in municipalities and strengthening cooperation between different actors. The carbon footprint of wood construction is significantly smaller than other building materials when a building's entire lifecycle, from the manufacture of building materials to construction, use, and recycling, is considered. Motiva runs the Public Wood Advisory Service, which is part of a two-year project covering a hands-on advisory service, free Wood Academy online trainings, regional events, and working groups focusing on the joint development of public wood construction. The project is funded by the Ministry of the Environment as part of the Wood Construction Programme (2016 to 2022).

<https://www.motiva.fi/puurakentaminen>

Sitoumus2050.fi platform

Sitoumus2050 is a unique concept that communicates Agenda 2030 goals and gives cities, companies, and citizens a concrete way to take action in reaching targets. The idea of the [Sitoumus2050.fi](https://www.sitoumus2050.fi) platform is to encourage organisations and citizens to set measurable sustainability targets, make public commitments,

and report regularly on their progress. The service is maintained by the Commission for Sustainable Development, and all commitments are accepted, published, and followed by the Commission. Organisations themselves can decide which sustainability goals are meaningful for them, and which actions are relevant when trying to reach their targets.

Commitments typically have targets for reducing greenhouse gas emissions, reaching carbon neutrality, or other environmental goals. Social sustainability goals are also popular. For citizens, the Sitoumus2050 platform provides a lifestyle test which allows you to count your personal carbon footprint. After taking the test, one can also publish one's own sustainable development commitment.

All information on the site is public, so anyone can check what kind of goals a certain company has set and read about how they have proceeded in their reports. So far more than 1,000 organisations have published their sustainable development commitments on the site, and more than 100,000 citizens have taken the lifestyle test and received an estimation of their lifestyle's carbon footprint, and how they could reduce it.

https://sitoumus2050.fi/en_US/kestavatelamantavat#/

Green Deal Agreements

Green Deal is a voluntary agreement between the state and the business community. Agreements can also be concluded with the public sector. Green Deal agreements are used to find solutions to climate challenges, reduce the loss of biodiversity and the over-consumption of natural resources, and promote a circular economy in Finland. Green Deal agreements bring together those who have a key role to play in bringing about the desired change.

The agreements may contribute to better implementation of the legislation or complement the law. For example, the objectives set in the agreements may be stricter than in the law, or certain objectives may be achieved without further regulation. Green Deals and the commitments made under them are part of Society's Commitment to Sustainable Development, introduced by the Finnish National Commission on Sustainable Development. The Parties undertake to set ambitious and achievable targets for environmental and social impacts. Green Deal agreements seek results that can be achieved relatively quickly, the follow-up of which is agreed in the agreement. The agreements aim to bring added value compared to the current situation by jointly seeking new solutions and approaches to address the selected challenges. The agreements specify the measures to be taken by the parties to the agreement and the undertakings to which they are committed to achieve the agreed objectives.

Examples of Green Deals: Plastic bag Green Deal (2016 to 2025), Green Deal in the construction equipment industry (2019 to 2025); Green Deal on sustainable dismantling (2020 to 2025); Emission-free construction sites

– Green Deal on sustainable procurement (2020 to 2030); Construction plastics Green Deal (2020 to 2027)¹.

<https://sitoumus2050.fi/en/tietoa-green-dealista#/>

Construction Plastics Online Training Package

The circular economy in construction is advancing on many fronts, but there is still room for improvement in plastics recycling. The construction sector is one of the industries that use the most plastics, but separate collection of the plastic fraction in the construction value chain is not yet commonplace. One major reason is the lack of expertise on construction sites and throughout the supply chain. The training package focuses on the film plastic used for packaging and protection, which accumulates most in terms of volume. The training package is related to the implementation of the voluntary Construction Plastics Green Deal (2020 to 2027). The Green Deal aims to increase the separate collection, reuse, and recycling of film plastics. The Construction Plastics online training is aimed at the entire construction industry supply chain. The free, self-study, and open-to-all training package is suitable for clients and implementers of construction projects and contracts, the product industry, the trade sector, and construction equipment rental companies. The training provides supervisors and management with additional information and skills for guidance. Motiva has produced the training package and maintains the online training platform commissioned by the Ministry of the Environment.

https://www.motiva.fi/ajankohtaista/koulutukset/rakentamisen_muovit_koulutuskokonaisuus (about the training course)

<http://www.motiva-verkkokurssit.fi> (online course)

Low-Emission Work Machines Online Training Package

Many of the machines used on construction sites are still powered by internal combustion engines and emit a significant amount of CO₂ and local emissions. Switching to low-emission machines and using them properly will help reduce the carbon footprint of construction and traffic emissions. In addition to reducing greenhouse gas emissions, the goal of online training is to reduce local emissions that are harmful to health, such as particulate matter, carbon monoxide and nitrogen dioxide, and noise. The training package is commissioned by the Ministry of the Environment and is part of the implementation of both the Green Deal in the Construction Equipment Industry and the Low Emissions Construction Sites Green Deal. The agreements aim to reduce emissions through voluntary action. The Low-Emission Work Machines training package is open to everyone, focusing on ways to reduce emissions from machinery from the perspective of the machine user, contractor, and builder. The training is free of charge, and the material adapted for short-term studies is ideal for both self-study and teaching

¹ https://www.youtube.com/watch?v=LX_1SmA18lw&t=10s

material. Motiva has produced the training package and maintains the online training platform commissioned by the Ministry of the Environment.

<http://www.motiva.fi/tyokoneala> (about the training course)

<http://www.motiva-verkkokurssit.fi> (online course)

Materials Marketplace

This national marketplace for materials is for the professional exchange of waste and production by-products of companies and organisations. The Materials Marketplace can also be used to search for and provide related services such as waste management and expert services. The key objective of the Materials Marketplace is to promote the recovery of waste and by-products and the circular economy by providing a meeting place for operators and users of recycled materials. The aim of the Materials Marketplace is to make the material flows generated in Finland more visible in one place, so that new ways of utilisation emerge around them, and the materials end up being increasingly utilised.

Such a recycling market is the key to increasing the value of recycled materials. Recycled materials should be considered valuable raw materials to keep them in circulation for as long as possible. The Marketplace originates from the renewal of the Finnish Waste Act (2020), according to which a possessor of waste must first search for a market-based waste management service on the platform before it is possible to ask for municipal waste management in accordance with the secondary liability of a municipality. The use of the Materials Marketplace is free of charge and open to industry players. Motiva operates the Marketplace, which is commissioned by the Ministry of the Environment.

<http://www.materiaalitori.fi>

KEINO Competence Centre

KEINO is a network-based Competence Centre for Sustainable and Innovative Public Procurement in Finland. The main objectives of the operation are: to increase the number of innovative and sustainable procurements in Finland; to make public procurement recognised and actively used as a management tool; and to ensure contract entities openly disseminate information on their own experiences and learn from one another. The KEINO Competence Centre aims to provide opportunities for collaboration and networking between procurement professionals and public actors involved in procurement, as well as businesses. The members responsible for the operation and co-development are Motiva, the Association of Finnish Local and Regional Authorities, the VTT Technical Research Centre of Finland Ltd, Business Finland, the Finnish Environment Institute SYKE, and Hansel Ltd. The first six are now still part of the consortium and are responsible for the operation and co-development of the centre.

The KEINO Competence Centre is part of the implementation of the Finnish Government Programme, and its operations are steered and funded by the

Ministry of Economic Affairs and Employment. KEINO supports and helps Finnish public contracting authorities with the development of sustainable and innovative procurement. Motiva is the coordinator of KEINO and responsible for the centre's services.

<https://www.hankintakeino.fi/en>

Place of Experiment

Place of Experiment is a digital platform for concrete experiments, launched in 2017 to improve an experimental culture in Finland in the Government's "Kokeileva Suomi" (Finland of Experiments) key project. Place of Experiment aims to find innovative solutions for the development of society and services. It also seeks to promote individual initiative and entrepreneurship and to strengthen regional and local decision making and cooperation. The Finnish model combines measures to facilitate experimenting with grassroots innovations based on the Government agenda.

Along with managing the platform and serving the experimenters community, Motiva manages thematic calls for experiments of short-term experiments (four to five months) funded by ministries and other stakeholders looking for new and innovative solutions to current practical challenges. Examples of thematic calls for experiments: Circular Economy (2017, 2019); AI (2018); Municipal Climate Solutions (2020); Responsible Food Services (2021); Preserving Biodiversity of the Finnish Archipelago Sea (2021).

<https://www.kokeilunpaikka.fi/en>

9.4.5 Activities and campaigns of the NGOs

A growing number of NGOs have climate-related activities. For example, the World Wide Fund for Nature (WWF Finland), the Finnish Association for Nature Conservation (Suomen Luonnonsuojeluliitto), Finn Church Aid (Kirkon ulkomaanapu), the Finnish Red Cross, Youth Academy, Fingo, and the Guides and Scouts of Finland (Suomen Partiolaiset) keep the issue constantly on the agenda and offer people opportunities to participate.

The Nature League (Luonto-Liitto in Finnish), established in 1943, is a nationwide non-governmental nature and environmental protection organisation for children and young people. The Nature League arranges environmental education for children and young people in the form of afternoon clubs and nature camps. It also provides opportunities to take action in thematic action groups. One of the action groups deals with the climate theme.

WWF Finland has participated in the worldwide Earth Hour movement since 2007. The event is held annually, encouraging individuals, communities, households, and businesses to turn off their non-essential electric lights for one hour, from 8:30 to 9:30 p.m. towards the end of March, as a symbol of their

commitment to the planet. Schools are also invited to participate, and some material and ideas are provided especially for them. WWF Finland also runs the Green Office, which is an environment management system for offices. For young people, WWF Finland provides an opportunity to take part in climate work in WWF Youth groups (WWF Nuoret) in the three biggest cities in Finland. WWF Youth groups organise campaigns and events and encourage other young people to take action. They focus especially on sustainable food.

EKOenergy is a non-profit ecolabel and promotes sustainable energy choices globally. The label is developed and managed by the Finnish Association for Nature Conservation, and EKOenergy-labelled energy is currently being used in 60+ countries. The EKOenergy label helps consumers find out and communicate about using climate friendly and environmentally sustainable energy. The label also works as a fundraising tool for renewable energy projects in developing countries. By using the label, renewable energy consumers make an additional positive impact. More than 40 projects were financed between 2018 and 2021. In 2020, UN DESA (UN Department of Economic and Social Affairs) included EKOenergy as one of the 16 good practices for SDG (Sustainable Development Goals) implementation, and in 2021, EKOenergy's commitment to promote renewable energy was accepted under the UN Energy Compacts programme.

Alongside the well-established NGOs, new NGOs, movements and loosely organised groups have emerged to require climate action and find solutions. For example, many of these groups bring together certain age groups or occupations and the use of the arts (concerts, music videos, exhibitions) or strongly highlight some consequences of climate change. More intense non-violent forms of action have also been introduced: civil disobedience practised by Extinction Rebellion Finland (Elokapina) has stimulated discussion about climate change, climate policy and acceptable forms of climate action.

[Ilmastotoiminta.fi](https://ilmastotoiminta.fi) gathers information on the different possibilities of climate and environmental activities today at one address, so more and more people can find the most suitable form of climate action. The site provides information on various organisations and movements that carry out climate and environmental activities, as well as tools for planning and implementing climate activities. The site was launched and is maintained by two private individuals with experience of climate communication, environmental action, and research.

Some new groups and movements

Fridays for Future is a worldwide youth-led movement in which many young people in Finland have also joined since 2018. It has succeeded in bringing up young people's views and concerns. Climate strikes by Fridays for Future have been organised in many towns, and the society has been forced to consider whether it is acceptable to miss school lessons while taking part in

social activities like climate action. In turn, adults have set up Climate Parents (Ilmastovanhemmat ry), which is active in insisting that decision makers consider the coming generation when deciding on climate issues. Climate Parents has been followed by Climate Grandparents (Ilmastoisovanhemmat ry) and a group called Activist Grannies (Aktivistimummot).

Protect Our Winters Finland Ry (POW) was established in 2014, and it combines especially those who like or work with winter sports. Well-known ambassadors like snowboarder Enni Rukajärvi have drawn attention to POW and its cause. In turn, Save Pond Hockey is uniting the global hockey community against climate change. It co-organises Save Pond Hockey Tournaments around the world and donates profits to projects tackling the climate crisis. Like POW, Save Pond Hockey has utilised ambassadors: among the more than 3,500 players who have joined the tournaments so far are the Stanley Cup champions, Olympic medallists, celebrities and the President of Finland.

Joint campaigns

NGOs and movements have also combined to conduct climate-change or energy-related campaigns, some of which have received broad publicity. For example, Birdlife Finland, Fingo, Greenpeace Finland, Coal-free Finland (Hiilivapaa Suomi), the Nature League (Luonto-Liitto), the Finnish Friends of the Earth, Natur och Miljö, Protect Our Winters (POW), the Finnish Association for Nature Conservation (Suomen Luonnonsuojeluliitto), and WWF Finland ran a campaign called “Irreplaceable” (Korvaamaton) to remind politicians and voters of the importance and urgency of climate action. The campaign targeted the parliamentary elections in 2019.

Coal-free Finland (Hiilivapaa Suomi) is a longer-term campaign at a municipality and city level to shut down coal plants in municipalities across Finland, in which citizens have decided to take action against the use of coal. The campaign is working in collaboration with the Finnish Friends of the Earth, the Finnish Nature League, Changemaker, Climate Parents, 350 Finland, Fingo, UN Youth of Finland, Europe Beyond Coal, and Save Pond Hockey and is run by volunteers from a variety of backgrounds. The campaign’s methods include lobbying and advocacy, participating in public debate, and awareness raising among citizens and stakeholders.

NGOs supporting climate education

Many NGOs also play an important role in supporting teachers and youth workers in climate education. They provide materials, visit schools, and arrange in-service training, mostly with the financial support of state actors, foundations, and even companies.

FEE Finland (the Finnish Foundation for Environmental Education) enhances a sustainable way of life through environmental education. FEE Finland is part of an international FEE (Foundation for Environmental Education) network, which consists of 73 member countries. FEE Finland coordinates the Green Key programme in Finland and enhances environmental education collaboration.

A non-profit organisation, Development Centre Opinkirjo, established in 1947, produces and offers training and teaching materials for teachers. Climate has been one of its themes for a few years now. Ilmastokirjo – Climate Spectrum provides material for teachers and students but also connects schoolchildren and other actors in society by facilitating a QA service and organising meetings on climate issues.

<https://ilmastokirjo.fi/>

9.5 Short descriptions and Internet links of some projects, networks, and campaigns

Climateguide.fi

The [Climateguide.fi](https://www.climateguide.fi) website provides information about climate change, its impacts, adaptation, and mitigation. The website's aim is to be a national, publicly available digital service about climate change and to provide up-to-date, independent, and reliable information about climate change based on research and other verified data. It also aims to support decision making, risk management, climate communication, and learning. The website is also available in Finnish ([Ilmasto-opas.fi](https://ilmasto-opas.fi)) and in Swedish ([Klimatguiden.fi](https://klimatguiden.fi)). The website and its main content are maintained by the Finnish Meteorological Institute (FMI), the Finnish Environment Institute (SYKE), and Natural Resources Institute Finland (Luke).

<https://www.climateguide.fi>

Kysyilmastosta.fi

In the [Kysyilmastosta.fi](https://kysyilmastosta.fi) web service, anyone can ask questions about the climate, climate change and its impacts, the behaviour of the climate system itself, or anything related to the climate. The web service will find researchers and experts to answer the questions. Users can also vote for questions they find interesting and important, and the service prioritises the most popular topics when seeking expert answers. In addition, new research is created from the questions submitted. The research is designed in collaboration with users and scientists, and research questions are approached with real-world research tools (such as climate models). The scientific process and the research results are then illustrated on the website, which is provided by the Finnish Meteorological Institute (FMI) and the Institute for Atmospheric and Earth

System Research (INAR) of the University of Helsinki. The service is available in Finnish and English.

<https://www.kysyilmastosta.fi/en/>

Ilmastokatsaus

The Finnish Meteorological Institute (FMI) publishes a monthly climate bulletin in Finnish (Ilmastokatsaus) and a yearly climate bulletin (Ilmastovuosikatsaus). Both online digital magazines are in Finnish and cover weather and climate issues, with articles about weather conditions in Finland and weather events worldwide, weather and greenhouse gas statistics, and changes in Arctic sea ice. The monthly bulletin also has English summaries of weather events. The magazine's target audience are from the fields of research and education, as well as members of the general public who are interested in the present climate, weather, and climate change. The FMI climate bulletin magazine also features a supplement called Research Letters, which is published twice a year in English, and it features short peer-reviewed papers about the climate, climate change, extreme weather and climate services.

<https://ilmastokatsaus.fi>

Climate Diet

The Climate Diet is a calculator, developed by the Finnish Environmental Institute, which helps consumers calculate their carbon footprint. It also gives advice on how to reduce it and presents the results compared to average Finns. The calculator considers different fields of life from housing to travel, food consumption, shopping habits and household waste management. Since its update in 2019, the calculator has attracted 119,000 visitors to calculate their carbon footprint, meaning approximately 34,000 calculations per year.

<https://ilmastodieetti.ymparisto.fi>

Climate.now

Climate.now is a multidisciplinary study and teaching module on the basics of climate change. It contains written material, video lectures and interviews, assignments, tests, and a guide for teachers that will help anyone familiarise themselves with the basics of climate change. You can complete the study module independently or as part of your higher education studies. In addition to teachers and students, the material can be used by companies, other organisations and media.

<https://www.climatenow.fi/>

Teacher's Climate Guide

The Teacher's Climate Guide is a free and open climate education package for subject teachers working in secondary schools and high schools. It explains climate change in the context of each school subject, and provides exercises and

visual material. It also contains tips for multidisciplinary climate education, tips for integrating climate change in education and activities at the primary level, and basic information about climate change and climate education. The English version is for international use and aimed at teachers around the world. <https://teachers-climate-guide.fi>

University of Eastern Finland (UEF) – United Nations Environment Programme (UNEP) Course on Multilateral Environmental Agreements

The UEF-UNEP Course on Multilateral Environmental Agreements (MEAs) is a high-profile two-week course on MEAs, international environmental lawmaking, and diplomacy. It is organised annually in cooperation between the University of Eastern Finland and UNEP, with a changing course venue and theme each year.

The aim of the course is to equip present and future negotiators of multilateral environmental agreements with the information and experiences of others in the area of international environmental lawmaking to improve the impact and implementation of these key treaties.

The course is intended for experienced Government officials engaged in international environmental negotiations. Other stakeholders such as representatives of NGOs and the private sector, researchers and academics in the field of international environmental law are also eligible. Starting from 2004, the course has had a total of 399 participants from 121 different countries. <https://sites.uef.fi/cceel/uef-unesp/>

Teachers' Climate Change Forum

University of Helsinki Science Education (a part of national LUMA Centre Finland) and Institute for Atmospheric and Earth System Research (INAR) have organised international Teachers' Climate Change Forum 2022 (TCCF) for continuous professional development program of teachers in all levels of education. The conference deals with climate science, climate education and the connection between these two domains. There is also online material provided for teachers; material provides teachers at different levels of education the latest research related to climate change, and supports teachers in building their own expertise and self-efficacy to teach climate change.

The Teachers' Climate Change Forum is a virtual forum organised by LUMA Centre Finland. At the forum, teachers interested in climate change education can share their practical experience and learn from each other. The Director of the LUMA Centre Finland chairs the forum.

<https://www.helsinki.fi/en/science-education-and-academic-outreach/teachers/teachers-climate-change-forum>

Towards Carbon Neutral Municipalities and Regions (Canemure)

Canemure, the Towards Carbon Neutral Municipalities and Regions -project implements practical measures for climate change mitigation during a six year period, from 2018 to 2024. Alongside practical climate action, the project will build capacity, create cooperation networks and spread good practices throughout Finland. The Canemure consortium consists of 21 partners: cities and municipal organisations, research institutions and companies. [https://www.syke.fi/en-US/Research_Development/Research_and_development_projects/Projects/Towards_Carbon_Neutral_Municipalities_and_Regions_CANEMURE/Towards_Carbon_Neutral_Municipalities_an\(50659\)](https://www.syke.fi/en-US/Research_Development/Research_and_development_projects/Projects/Towards_Carbon_Neutral_Municipalities_and_Regions_CANEMURE/Towards_Carbon_Neutral_Municipalities_an(50659))

KUJA and KUJA2 projects on the continuity management of municipalities and local and regional authorities

The objective of the KUJA project, “The continuity management of municipalities” (2014 to 2016), was to develop the capacity of local actors to ensure disruption-free functioning in all situations, including during weather- and climate-change-related disruptions. The tools produced during the project support the development of preparedness and continuity management, as well as the protection of citizens’ wellbeing. With the KUJA2 project, “The continuity management of local and regional authorities” (2017 to 2019), the scope was widened to include provinces. Provinces play an important role in the coordination of regional preparedness after the major health, social services and regional government reform in 2019. KUJA2 aimed to strengthen the interconnectedness of municipalities, regional authorities, and their key stakeholders and to promote a shared understanding of preparedness. Both projects have been implemented in cooperation between the Association of Finnish Local and Regional Authorities and the Finnish National Emergency Supply Agency.

Climate resilience tools by Tapio

Climate resilience tools for the public and private sectors were released at the end of 2016, compiled by Tapio Consulting Services and funded by the Ministry of Agriculture and Forestry. These tools include a variety of good practices, guides, and measures used by public and private sector actors to implement measures in the different aspects of climate resilience. The concept also presents good examples of how to secure climate resilience, and how to assess it.

Citizens Climate Pledge

Citizens Climate Pledge is an NGO-led initiative that encourages individual citizens to announce their personal commitment to halve their carbon footprint within ten years. Launched in 2015 in Finland, Citizens Climate

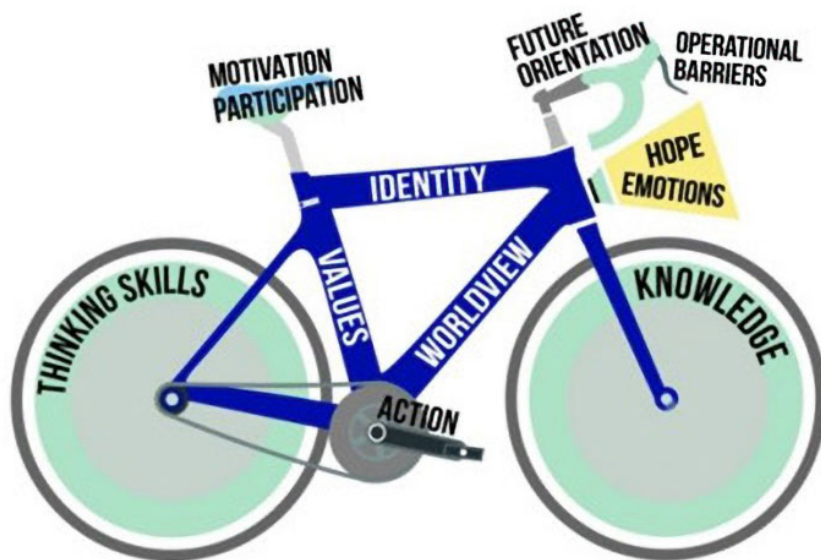
Pledge aims to bring citizens into the centre of the societal transition to low-carbon development. Today, the initiative has more than 2,500 signatories, including the present and two former Presidents of Finland, the leaders of Finland's largest corporations, musicians, artists, and top athletes. Citizens Climate Pledge became global in 2016, when the Finnish initiators launched the international version with UNFCCC. It is now possible for any global citizen to commit to join a global movement of action on climate change. <https://climatepledge.global/>

Bicycle Model on Climate Change Education

Four Finnish researchers introduced their holistic model of climate change education in 2017 (Figure 9.3). The model is presented as a bicycle, because both climate change education and a bicycle are entities that require all their parts to function together. The idea of being in motion is also a common feature. The model has been well adopted by practitioners, because it helps analyse and plan education on the wicked problem of climate change. It has also been further developed at least by The Association of Finnish Children's Cultural Centers and in Early Childhood Educator's Climate Guide. <https://www.sirene.fi/blog/bicycle-model-on-climate-change-education/>

Figure 9.3

Bicycle model on climate change education



MAPPA.fi

The MAPPA service is an environmental education “search engine”, which already includes more than 1,600 materials for learning outside and teaching sustainable lifestyles. It serves as an open and common place for more than 300 organisations that produce material for teachers and other educators. Educators themselves can also add their good materials to the service so that they can be used by others as well. For example, the user can search for materials by age

group, subject, or the type of the situation in which the material is required. There are also “thematic backpacks” in which materials have been collected that together form a useful set like “Food Materials” or “A Perspective of Hope in Climate Education”.

MAPPA was first published in 2013 and has since grown to be a significant service that helps teachers find ideas and materials and producers to get more visibility for their work. MAPPA has been developed further, and it now includes a common calendar of events in the field and presents supporting services that are available for teachers around the country. MAPPA was established and is maintained by the Finnish Association of Nature and Environment Schools and was initially funded by the Ministry of the Environment and later the Ministry of Education, Partioaitta, and the Otto A. Malm Foundation.

<https://mappa.fi>

Educators’ Climate Front

Climate Front in a community that helps professionals in various fields to act together to mitigate climate change. The idea is to help people use their expertise in climate work while helping the professions cooperate. One can join the Climate Front as an individual or as an organisation. Teachers and Educators are currently one of the six professions in the Front. The others are psychologists, doctors, engineers, IT workers, and artists.

<https://ilmastorintama.fi/>

Climate Thoughts – Guide to Climate Education in Youth Work

Youth Academy published a Guide to Climate Education in Youth Work in 2020. The guide gives youth workers more insight into meeting young people’s climate feelings and discussing and taking action on climate issues. The guide helps the youth worker to better encourage and support young people to take part in climate discussions, activities, and influences in their daily lives.

https://www.nuortenakatemia.fi/wp-content/uploads/2020/12/ilmastoajatuksia_opas-nuorten-ilmastokasvatukseen-2020.pdf

Literature

Glasgow work programme on Action for Climate Empowerment (2021) UNFCCC (CMA) 2021

https://unfccc.int/sites/default/files/resource/cop26_auv_3b_Glasgow_WP.pdf

Government report on the National Energy and Climate Strategy for 2030 (2017)
Publications of the Ministry of Economic Affairs and Employment of Finland 12/2017.

<http://urn.fi/URN:ISBN:978-952-327-199-9>

Strategic programme to promote a circular economy

<https://ym.fi/documents/1410903/42733297/Government+resolution+on+the+Strategic+Programme+for+Circular+Economy+8.4.2021.pdf/309aa929-a36f-d565-99f8-fa565050e22e/Government+resolution+on+the+Strategic+Programme+for+Circular+Economy+8.4.2021.pdf?t=1619432219261>

The Finnish Education System

<https://okm.fi/en/education-system>

National Core Curriculum for General Upper Secondary Education 2019, Finnish National Board of Education 2021, Regulations and guidelines 2019/2c.

National Core Curriculum for Basic Education 2014, Finnish National Board of Education 2014, Publications 2016/5.

eRequirements service for qualification requirements for the vocational qualifications

<https://eperusteet.opintopolku.fi/#/en>

Policies to promote internationalisation in Finnish higher education and research 2017–2025

<https://okm.fi/en/international-strategy-for-higher-education-and-research>

The Climate Barometer 2019, Ministry of the Environment Press release 18-03-2019.

[https://www.ymparisto.fi/en-US/Maps_and_statistics/Climate_Barometer_2019_Finns_wish_to_hav\(49671\)](https://www.ymparisto.fi/en-US/Maps_and_statistics/Climate_Barometer_2019_Finns_wish_to_hav(49671))

Sustainable development policy of the Ministry of Education and Culture and its administrative branch - Valto (valtioneuvosto.fi)

Internet links

[Climateguide.fi](http://climateguide.fi) web portal,

<https://www.climateguide.fi>

Ilmastokatsaus (climate bulletin, in Finnish)

<https://www.ilmastokatsaus.fi/>

[Kysyilmastosta.fi](http://kysyilmastosta.fi) (ask about climate) web service

<https://www.kysyilmastosta.fi/en/>

Climate University

<https://climateuniversity.fi/>

Climate.now

<https://www.climatenow.fi>

Ilmastoinfo (Climateinfo, in Finnish),

<https://www.hsy.fi/ilmastoinfo/>

Energy Awareness Week

https://www.motiva.fi/en/public_sector/training_and_communication_in_the_improvement_of_energy_efficiency

Finnish University Partnership for International Development (UniPID),

<https://www.unipid.fi/>

The Higher Education Institutions Institutional Cooperation Instrument Programme (HEI ICI)

<https://www.oph.fi/en/programmes/hei-ici-programme>

Hinku network – Towards Carbon Neutral Municipalities,

<https://www.hiilineutraalisuomi.fi/en-US/Hinku>

Motiva, a state-owned company promoting the sustainable use of energy and materials,

<https://www.motiva.fi/en>

National IPCC working group (in Finnish),

<https://www.ilmatieteenlaitos.fi/suomen-ipcc-tyoryhma>

The Finnish Climate Change Panel

<https://www.ilmastopaneeli.fi/en/>

LUMA Centre Finland (science education network of Finnish universities)

<https://www.luma.fi/en/>

Sustainable development certification of educational establishments,

<https://koulujaymparisto.fi/in-english/>

Teacher's Climate Guide

<https://teachers-climate-guide.fi/>

Luokanopen ilmasto-opas (Class Teacher's Climate Guide, in Finnish)

<https://luokanopenilmasto-opas.fi>

Varhaiskasvatuksen ilmasto-opas (Early Childhood Educator's Climate Guide, in Finnish)

<http://vakanilmasto-opas.fi>

The Association of Finnish Local and Regional Authorities

<https://www.localfinland.fi/>