



Climate Change and Health

Academy Programme 2020–2023

Programme memorandum

1 Background

Climate change is one of the biggest global health threats of this century. Climate change affects our living environment and therefore our health, which has societal consequences for our society. Long-term interdisciplinary research produces knowledge that allow us to anticipate, prepare for and reduce health risks resulting from climate change.

Relatively little research has been done on the effects of climate change and its mitigation measures on human health and wellbeing in Finland. A broad range of scientific knowledge is needed to reduce and prevent the harmful health effects of climate change. Any positive impacts that climate change might have on health on a regional level are also worth investigating.

Flooding, droughts and forest fires that have increased as a result of extreme weather such as storms and heatwaves have a direct impact on the health and wellbeing of the population. Heatwaves and the associated prolonged heat stress can be dangerous for older people, children, people with chronic illnesses and other vulnerable individuals. Increased rainfall and flooding, on the other hand, increase surface runoff and cause water pollution. Wet conditions accelerate the growth of harmful moulds and yeasts. Heavy rain can also interfere in the operation of wastewater treatment plants, which increases the risk of waterborne diseases and epidemics. Flooding and droughts jeopardise food production and access to sufficient nutrition and clean drinking water everywhere in the world. In the north, climate change can also have an impact on people's mental health as long periods of rainy and cloudy weather become more common. On the other hand, health problems resulting from periods of sub-zero temperatures may decrease.

As temperatures rise, zoonoses (diseases that can be transmitted to humans from animals) may spread to new areas with the expanding ranges of the host organisms. Plant diseases may also spread across wider areas. This can have a major impact on, among other things, food production. In addition, a high rate of migration increases the likelihood of previously eradicated contagious diseases returning or new diseases spreading to Finland.

Climate change affects the air that we breathe both directly and indirectly. Warm, dry conditions and more frequent forest fires increase the amount of particulates in the air. Measures taken in transport, energy production and construction, for example, to mitigate climate change also change the composition of the air that we breathe. These changes, together with higher ozone levels, cause changes in air quality. Longer growing seasons and the potential introduction of new plant species increase the amount of allergenic pollen in the air.

Increasing health problems due to climate change also bring new challenges and increasing costs for society. The effects that climate change has on health are the sum of many factors. Basic research must produce knowledge that can be used to anticipate both the effects that climate change has on health and the associated economic and social risks and uncertainties.

2 Objectives

The framework and themes of the Climate Change and Health Academy Programme have been chosen to cover a range of different interactions that climate change can have in relation to health and society's performance. Due to the broadness of the topic, projects to be funded under the programme are required to demonstrate an interdisciplinary approach and a broad scope of research results.



The Climate Change and Health Academy Programme aims to provide knowledge needed to choose the best ways to adapt to climate change. The effects of climate change can be forecast and analysed with tools such as scenarios and modelling. The programme factors in different kinds of climate scenarios and the environmental impacts and health effects that they project. The programme is designed to include research into the direct and indirect effects of climate change on human health and on maintaining and promoting health, and into developing new assessment techniques and examining the associated prerequisites and challenges in the short and long term.

In addition to producing scientific research findings of a high standard, the programme is hoped to increase dialogue between different scientific disciplines and different organisations.

Main aims of the programme:

- produce new knowledge to help forecast the effects that climate change has on health, prevent harmful impacts on health and adapt to climate change
- promote new ways of doing science in the topics covered by the programme
- develop and strengthen multi- and interdisciplinary, integrated research collaboration.

Other aims:

- strengthen interdisciplinary problem-based research of a high standard in Finland in the long term
- actively disseminate new scientific findings to policy-makers, stakeholders and the public
- pool scattered research capacity
- advance international networking within Finnish climate change research.

3 Research themes

At the core of the Climate Change and Health Academy Programme is a desire to enhance the knowledge base needed to assess health risks resulting from climate change. The programme seeks to develop better, more in-depth ways to analyse short-term and long-term impacts on health and to develop assessment techniques.

The Climate Change and Health Academy Programme is built around two themes. The list below provides a few examples of key research topics related to each theme. The list is by no means exhaustive.

1) Changes and uncertainties caused by climate change in terms of environmental health

- effects of prolonged heatwaves on different population groups, preparing for and preventing risks
- impact of climate change on occupational health and labour productivity
- effects of changes in air quality on human health
- effects of increasing rainfall and flooding on the risk of waterborne diseases
- effects of a warming climate on the growing risk of vector-borne and other infectious diseases

2) Social implications of the health effects of climate change

- impact of social factors on the health risks resulting from climate change



- geographical and regional differences in exposure and vulnerability
- more accurate forecasting models for developing an early health warning system
- anticipation of instability relating to health threats, the vulnerability of the population, society's preparedness and safeguards
- policy instruments to combat the harmful effects that climate change has on health

Applications are encouraged that focus on the least-known health effects of climate change. The programme also seeks to promote research that

- offers improved, interdisciplinary ways to assess the combined effects of the most important mechanisms of climate change
- deepens our understanding of the opportunities and means to prevent and mitigate impacts on health.

The programme incorporates many different disciplines and fields of science and research that relate to the effects that climate change has on health. Regional forecasts of climate change and its various impacts, comprehensive healthcare registers, population and environmental research databases as well as the interest of several research institutes and universities to promote research relating to climate change create a solid foundation for the study of the health implications of climate change.

4 Implementation

4.1 New scientific approaches

The broadness and complexity of the topic call for an interdisciplinary approach. New forms of close cooperation between researchers from different research fields in the form of consortia make it possible to study links between climate change and the health of individuals/the population and their significance from society's perspective

4.2 Funding

The Climate Change and Health Academy Programme is a four-year research programme (2020–2023) funded by the Academy of Finland. Through the programme, funding is provided to multi- and interdisciplinary research conducted by research projects and consortia with a view to supporting national and international cooperation and networking. A research consortium is a collaboration of independent projects working under a joint research plan by combining different methods and scientific disciplines with a view to achieving greater added value than is achieved by normal project collaboration.

The Climate Change and Health Academy Programme will not provide funding to the following topics (there is already an ongoing Academy Programme and a strategic research theme focused on the topics):

- development research
- towards a sustainable, healthy and climate-neutral food system.

The Academy Board has set the programme's funding budget at 8 million euros.



4.3 National cooperation

The Climate Change and Health Academy Programme will include active collaboration with other ongoing thematic programmes run by the Academy of Finland and the Strategic Research Council. This cooperation will also take into account programmes and projects run by other Finnish organisations under this same theme as well as programmes run by Business Finland.

4.4 International cooperation

The Academy Programme will aim at selective collaboration with foreign research funding agencies within the programme's theme, insofar as the collaboration benefits Finnish research. Another aim is to collaborate with corresponding and relevant international programmes and projects as well as with leading foreign research organisations in the field.

The Belmont Forum is set to open an international call for joint projects under the theme Climate, Environment and Health in February 2019. The Academy of Finland will participate in the call and has set aside one million euros for Finnish projects successful in the call.

4.5 Schedule

Within the programme, funding will be provided to individual projects and consortium projects for a maximum of four years. The funding can be applied for by both individual research teams and consortia composed of two or several research teams. The funding period starts on 1 January 2020 and ends on 31 December 2023. Individual projects may apply for a maximum of 500,000 euros. Consortia may apply for a maximum of 1,200,000 euros: a single consortium subproject may be granted a maximum of 500,000 euros.

A detailed schedule for the call and the review of applications is given under *Application guidelines and review criteria* in this memorandum. Information on research themes, schedules and application processes of any supplementary calls will be announced separately.

4.6 Steering group and coordination

The programme is run by a steering group composed of members of the Academy's research councils and other expert members. The duties of the steering group are:

- to submit to the programme subcommittee a proposal on projects to be funded
- to make a proposal to Academy research councils and other funding bodies on any new calls and/or additional funding within the programme
- to manage and monitor the programme
- to steer programme coordination
- to be responsible for the final evaluation of the programme
- to promote the application of research results produced within the programme.

4.7 Programme coordination

The programme strives to promote the development of the selected projects into a coherent and cohesive structure through active cooperation and exchange of information. The steering group, the programme managers and the project officer appointed by the Academy are in charge of programme coordination.



They work closely with the projects to facilitate the attainment of the objectives set for the programme. The aim is to ensure that the projects reinforce each other and that the programme generates new multidisciplinary research knowledge. Consequently, the principal investigators (PI) of the projects will be required to commit themselves to the programme objectives and to cooperate actively throughout the programme and during the programme evaluation upon its completion.

The PIs of the projects selected for funding under the programme will be required to

- assume responsibility for and report on the scientific progress of the project and on the use of the funds in accordance with the instructions of the programme manager
- ensure that the whole research team attends all events organised by the programme coordinators, and facilitate exchange and cooperation between research teams in the programme
- take part in producing reviews, syntheses and information material around the programme, and actively disseminate information about the programme's progress and results on public and scientific forums.

During the programme, the research projects will participate in events arranged together with end-users of research results and in any other activities designed to disseminate information to stakeholders.

4.8 Final evaluation

The Academy Programme will be evaluated on its completion to assess implementation and outcomes. The scope and aims of the evaluation will be defined during the programme, but it may consider e.g. the

- attainment of the programme's aims
- programme implementation (coordination, role of the steering group, project activity)
- achievement of intended impacts
- national and international cooperation
- publicity and visibility of research conducted within the programme.

The evaluation may be carried out as part of a more extensive evaluation of Academy Programmes or other national programmes and in cooperation with other national and international actors.

The research teams receiving funding are required to report on the progress of their projects in accordance with the decision of the steering group and to submit a research report to the Academy upon project completion.

5 Application guidelines and review criteria

This Academy Programme has a two-stage call. At the first stage, applicants submit letters of intent including short plans of intent (guidelines provided in connection with the Academy's April 2019 calls). **The non-negotiable deadline for letters of intent is 24 April 2019 at 16.15 local Finnish time.** The steering group will make a proposal to the programme subcommittee appointed by the Academy Board on projects that would best match the programme objectives based on the letters of intent. The projects selected to proceed to the second stage (to submit full applications) will be notified of the programme subcommittee's decision in June 2019.



Applicants requested to submit full applications must prepare a complete research plan and submit it in the Academy's online services **by 4 September 2019 at 16.15. The deadline is non-negotiable.** The guidelines for full applications are provided in connection with the Academy's April 2019 calls. **The cost estimate must be realistic and justified by type of expenditure in the research plan.**

The full applications will be peer-reviewed by an international expert panel. Based on the scientific review of the applications and considering the programme aims, the steering group will prepare a proposal to the programme subcommittee on the projects to be funded. The subcommittee will make the funding decisions in December 2019 at the latest.

Applications will be reviewed following the general criteria applied to all Academy Programmes (see [Guides for reviewers](#) on our website). Besides the general review criteria, focus will also be placed on the objectives specific to the programme, as described under *Objectives* of this memorandum.

6 More information

This programme memorandum is available as a PDF download at www.aka.fi/clihe > EN.

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