

# Climate change and adaptation strategies for human health in Europe

## The cCASHh Project:

*The health of populations in Europe will be affected in the coming decades by global climate changes. Adaptation is a key response strategy to minimise potential impacts of climate change, and to reduce, with the least cost, the adverse effects on health.*

*cCASHh investigated some of the many ways in which climate change affects health and how the environment and health sector can adapt.*



### Objectives

The key objectives were:

- Identification of the vulnerability to adverse impacts of climate change on human health;
- Review of current measures and technologies, policies and barriers to improve the adaptive capacity of the human populations to climate change;
- Identification of the most appropriate measures, technologies, policies and the most effective approaches to implementation, for European populations to successfully adapt to climate change;

- Estimate the health benefits of specific strategies or combinations of strategies for adaptation for vulnerable populations under different climate change scenarios;
- Estimate costs due to climate-related damage and the implementation of adaptive measures and benefits (both of climate change and of adaptation strategies) including co-benefits independent of climate change.

The cCASHh project included a combination of impact and adaptation assessment for four climate-related health outcomes:

- Health effects of heat and cold;
- Health effects of extreme weather events;
- Infectious diseases transmitted by insects and ticks, e.g., tick-borne encephalitis, malaria (vector-borne and rodent-borne diseases);
- Infectious diseases transmitted in the water supply or through food (waterborne and food borne diseases).

### Key findings and conclusions

cCASHh surveys showed that:

- Europe is not well prepared to cope with “unexpected” extreme thermal stress events. In Western Europe alone, 35 000 excess deaths were reported during the 2003 heat-wave. There is an estimated 1 -10% increase of mortality by 1 degree increase of temperature, estimated;
- A contingent valuation survey was carried out to estimate the benefits of reducing the risk of dying during heat-waves. It was estimated for the city of Rome, that the monetised mortality damages of the heat-waves in the absence of planned adaptation programmes would be €281 million for the year 2020 (in 2004 Euros);

- There is incomplete information collection on short and long-lasting health effects of floods;
- Tick-transmitting Lyme borreliosis and tick-borne encephalitis (TBE) (*Ixodes ricinus*) has spread into higher latitudes (in Sweden) and altitudes (in the Czech Republic) in recent decades and has become more abundant in many places;
- Although several models predicted a potential increase of malaria in Europe, there is agreement that the risk is very low under current socioeconomic conditions;
- There are some hypotheses that point to a considerable potential for climate-driven changes in Leishmaniasis distribution in the future;
- Cases of salmonellosis increase by 5% to 10% for each one-degree increase in weekly temperature, for ambient temperatures above about 5° C;
- Outbreaks of cryptosporidiosis have occurred as a result of intense precipitation.

Experts surveyed ranked income, equality, type of health care system, and quick access to information as the most important factors enabling effective response to climate change. Concerns were raised about a negative impact on “adaptability” in parts of Europe with rising inequalities, falling prevention investment and aging populations.

Additional responses needed to climate change in Europe, include the strengthening of effective surveillance and prevention programmes in areas at risk of new diseases; sharing lessons, early warning systems, data and information across countries and sectors on prevention of extreme events; development of climate change risk management practices in health care systems; and awareness raising and risk communication.

In general, early action was found to be most possible and important when:

- Action measures have already been shown to be effective under current climate conditions;
- Severe impacts are possible (for example, high mortality from heatwaves);
- Multisectoral alliances, partnerships and networks are in place;

- Adaptation measures have a long lead time (for example, changing infrastructure to reduce the extent of an urban heat island effect);
- Decisions have long-term effects (for example, building settlements in areas that are at risk of flooding), and there is a need to reverse trends that threaten adaptive capacity.

### Relevance and contribution to EU policy

At an international level, recommendations on extreme weather events were further discussed with policy makers in Bratislava and adopted at the 4th Ministerial Conference for Environment and Health, in Budapest (2004). These recommendations became part of the European Environment and Health Action Plan, launched in 2004. Current research that builds on the cCASHh work has been instrumental in the development of the EU Green Paper for adaptation, to be launched in 2007.

cCASHh results were presented in Montreal at the UN Framework Convention for Climate Change, December 2005 and have built a base for the 4<sup>th</sup> assessment report of the Intergovernmental Panel of Climate Change.

### Climate change and adaptation strategies for human health in Europe

#### Project acronym

cCASHh

#### Contract number

EVK2-CT-2000-00070

#### FP5 Thematic Programme

Energy, Environment and Sustainable Development

#### Duration

39 months (2001-2004)

#### EC contribution

€ 1 352 000

#### Website

<http://www.euro.who.int/ccashh/>

#### Project coordinator

Dr Bettina Menne  
WHO Regional Office for Europe  
via Francesco Crispi, 10  
00187 Rome  
Italy  
bme@ecr.euro.who.int