

MANAGING THE HEALTH EFFECTS OF CLIMATE CHANGE

4 Shelter and Human Settlements

Climate change is not just an environmental issue—it is also a health issue. The major health threats due to climate change are caused by changing patterns of disease, water and food insecurity, vulnerable shelter and human settlements, extreme climatic events, and population growth and migration.

[The UCL Lancet Commission on Managing the Health Effects of Climate Change](#)

London's leading multidisciplinary university, UCL, has teamed up with the *Lancet*, one of the world's leading medical journals, to launch a joint commission to study and report on managing the human-health effects of climate change. Chaired by Professor Anthony Costello of the UCL Institute for Global Health, the commission's membership includes 24 academics from a wide range of disciplines varying from anthropology to mathematics.

[For detail and references, please see 'The UCL Lancet Commission on Managing the Health Effects of Climate Change' published in the *Lancet*, Issue 373, May 2009 \(Costello *et al.*\).](#)

The management of health effects of climate change related to shelter and human settlements requires not only secure emergency shelter for those displaced or affected by climate variability events, but also human settlements prepared for the future climate-changed environment.

Box 1: Urban Woes and Risks

- Half the world's urban population in low income countries lack piped water, waste collection, paved roads, sewers and storm drains.
- One-third of the world's population lives within 60 miles of a shoreline and 13 of the world's 20 largest cities are located on a coast, making them vulnerable to both sea level rise and increased extreme storm and flood events.
- Ninety-nine per cent of households and businesses in low-income countries do not have disaster insurance.

economic disparities between the social classes will grow as climate change continues and natural disasters increase. Many vulnerable people already live in urban settlements where they are exposed to risks from floods and landslides and have limited resources for adapting to climate change. In the case of natural disasters that disrupt water patterns, the urban poor are more susceptible to resulting health impacts than those living in homes that are protected against fluctuations in water supplies.

There are synergies between development and climate change adaptation. Successful well-governed cities that focus on improved housing, living conditions and infrastructure will reduce poverty and, at the same time, be better positioned to adapt to climate change. There is a need to adapt urban settlements, particularly cities, in two ways: first, by designing energy efficient and green settlements that contribute less to the causes of climate change and second, by adapting settlements to be more 'climate resilient', thus making them better able to cope with the increasing risks of climate change (see Box 2).

Settlements with little economic diversification, where most incomes comes from climate-sensitive primary resource industries such as agriculture, forestry, and fisheries, are more vulnerable to climate change. The poor will be much more vulnerable than the wealthy, and

There is huge environmental injustice in the global distribution of the health impacts of climate change, and populations in countries that minimally contribute to global CO2 emissions are often

among the most vulnerable in terms of detrimental health effects. Private enterprise can potentially unleash significant investment for adaptation in cities, but local governments must stimulate local financial services, insurance and provision of appropriate supplies to encourage this route to adaptation. Major infrastructural investment will remain the role of government and attracting local governments to invest in climate change adaptation must be perceived as complementary to development goals.

Box 2: Energy Poverty and Environmental Sustainability

There are currently billions of people living in energy poverty, which presents a major challenge in many developing countries. This includes:

- 2.4 billion people who rely on biomass (non-renewable living and recently dead biological material that can be used for fuel) for cooking and heating.
- 1.6 billion people who have no access to electricity.

People living in energy poverty employ expensive, polluting energy sources that result in increased risks to their health and to the environment. Therefore the need exists to improve access to secure, clean, reliable, affordable and sustainable sources of energy.

Multi-sectoral collaboration is needed to coordinate effective climate resilient urban planning. Tackling climate change-related health problems in urban settlements presents a massive political challenge and demands the creation of new governance systems at all levels. The most vulnerable groups need a stronger voice in the

decision-making processes and local political will is necessary to develop institutional capacity to create stronger public health systems. Finally, co-operation and co-ordination between sectors and different levels of governance is necessary to distribute resources and expertise for adapting to climate change (see Box 3).

Box 3: Necessities for Climate Change Policy

- Climate change adaptation needs to be considered at all levels in order to avoid both the short-term inevitable consequences of climate change and the potential consequences of non-action or late response.
- Climate change policies should not be self-contained but integrated with other policies and policy responses vertically (among the different levels of governance), and horizontally (within the structures of government, civil society, NGOs and the private sector).
- Adaptation will require local knowledge, skills and capacity. Good governance initiatives need to understand the limitations and constraints of local and municipal governments.

The vulnerability of human settlements, especially those of the poor, has not been properly articulated in adaptation strategies. This is partly because of the way climate change has been framed, nationally and internationally, with a bias towards mitigation and with adaptation analyses limited to rural areas and agricultural systems. Although efforts to implement development strategies to assist the rural poor in adapting to climate change are crucial and necessary,

more effort is needed to deepen the understanding of equivalent strategies adopted by the poor in the urban context.

Technology and city planning information must be widely available and utilised to protect against climate change. Technological adaptations employed in the design of houses and settlements have the potential to play a major role in safe-guarding the health of individuals and populations through protection against thermal extremes, disaster-proofing, barriers and deterrents to infectious disease vectors and greater energy efficiency (see Box 3).

Technologies that would enable settlements to adapt to climate change have been developed; the challenge is to make them available where they are needed by providing knowledge and financing. Thus, we need to create institutional mechanisms for making those technologies accessible and relevant to people and localities which suffer most from climate change.

Box 4: The Development of Technological Adaptations

There are three dimensions to this problem:

- Technology for new building structures e.g. energy efficient and built with low-carbon materials.
- Planning of settlements e.g. building appropriate infrastructure for flood control
- Acquisition and dissemination of information, land-use planning and management systems to deal with vulnerability e.g. making city services more climate-friendly by giving priority to affordable and efficient public transportation, and by providing access to affordable adequate housing for the population.

Despite a lack of coordination with higher-level policies, many cities and sub-national governments have started to include adaptation measures in their planning processes. However, since many local governance structures have responsibility for adaptation policies such as land use planning, health and transportation, there remains a strong need to boost initiatives at the local level. Local initiatives need to link to national and international efforts in order to achieve a wide ranging, successful response to climate change.

Conclusions

- Climate change adaptation and mitigation are central to overall development policy across government departments and should be taken into consideration for all governance actions.
- Successful, well-governed cities that focus on improved housing, living conditions and infrastructure will reduce poverty, and at the same time be in a better position to adapt to climate change.
- Accountability mechanisms are crucial. New funding and networks are required to monitor what is happening in government, civil society, academia, local government and communities, especially in the most vulnerable populations.
- Individuals, organisations and governments all have a vital role to play in advocating for and implementing change at a variety of levels.
- Economic diversification lessens vulnerability to climate change, especially where a high percentage of incomes are derived from climate-sensitive primary resource industries such as agriculture, forestry, and fisheries.
- Global task forces, research and advocacy groups need to adequately represent and involve those who will be most affected by climate change.

- Technology and city planning information must be widely available and utilised to protect against climate change.
- Health issues can play a crucial role in strengthening carbon mitigation debates and targets.
- A comprehensive solution to the health problems associated with climate change will need to move

beyond responses internal to health systems. Health systems must not simply act as a platform for the delivery of clinical services, but also provide the foundation for an effective public health response to the many climate-induced threats to health.

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Managing the health effects of climate change: Changing patterns of disease and mortality

Managing the health effects of climate change: Food

Managing the health effects of climate change: Water and sanitation

Managing the health effects of climate change: Shelter and human settlements

Managing the health effects of climate change: Extreme events

Managing the health effects of climate change: Population and migration

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