



Climate Change in the UK Overseas Territories

A Brief Overview of the Science, Policy and You

What do droughts in the Mediterranean, more intense hurricanes in the Caribbean, warmer seas in the South Atlantic, and disappearing coastlines in the Pacific have in common? They are all results of the phenomenon known as climate change. Climate change, or global warming as it is sometimes called, refers to the steady climb in the Earth's temperature caused by increased levels of carbon dioxide and other gases in the atmosphere. It is a pressing issue for the entire global community and it is one that the 14 United Kingdom Overseas Territories (UKOTs) cannot afford to ignore.

Climate change is happening

The global trend in the Earth's average temperature is undoubtedly upwards:

- Global average surface temperature increased by about 0.6°C during the 20th century.
- Sea levels increased between 10 cm and 20 cm and the temperature and acidity of oceans changed.
- The 1990s were the hottest decade on record and 1998 the hottest year on record since temperature recording began some 150 years ago.

Climate change is happening at a much faster rate than originally expected. The Intergovernmental Panel on Climate Change (IPCC), an assessment team of hundreds of scientists worldwide who have been studying and tracking the climate system since 1988, has warned that average global surface temperatures could increase between 1.4°C and 5.8°C by the end of this century. This projection is significantly larger than the panel's 1996 prediction at the time of its second assessment report, which suggested temperatures could increase between 1°C and 3.5°C by 2100.

The impacts of climate change are far-reaching

As a result of this warming, the IPCC has projected that the global mean sea level could rise between 9 cm and 88 cm between 1990 and 2100. This could mean flooding, loss of



Hurricane Ivan in the Cayman Islands. The number and intensity of storms has increased in recent years

Credit: Department of Environment, Cayman Islands Government

land in low-lying areas, contamination of groundwater with saltwater, and the destruction of wetlands and coastal ecosystems. Warming also brings changes in precipitation patterns. Water-scarce areas, like the Mediterranean, are likely to suffer from further decreases in rainfall. Some areas, like the Caribbean and the Pacific, will experience an increase in the intensity of tropical cyclones.

Another impact associated with the warming climate is change in the distribution, range and abundance of plants and animals. Changed climatic conditions will either allow them to thrive outside their usual range or make their usual range inhospitable. Melting glaciers, also known as glacial retreat, in the South Georgia and South Sandwich Islands, could increase the habitat of invasive mice and reindeer, which would put the Antarctic's only songbird, the endemic South Georgia pipit, at risk.

Climate change is also likely to affect human health through increases in heat stress and air pollution as well as through declining water quality and the spread of infectious diseases as vectors change range or modify their life cycles. In the Caribbean and the Pacific, there is concern about increases in the frequency and severity of dengue fever outbreaks as warmer temperatures reduce the incubation period of the dengue virus and speed up the larval stage of the mosquitoes.

One of the most complex issues of our time

Climate change poses a challenge for all aspects of human and social development in the UKOTs. It is one of the most complex issues of our time and the relationship between man and the environment is at the heart of this issue. As with all environmental issues, impacts and consequences come together in a large interconnected web that includes economic, social and political concerns.

Another level of complexity stems from the uncertainty that surrounds climate change. There is consensus that change is taking place, but there is less agreement on what portion of the change is due to natural climate variability and what portion is a consequence of human activity. Although the science is still evolving and many of the projections are hindered by large uncertainties, there is growing evidence that climate change could cause sudden and dangerous changes. This evidence ought not to be ignored by UKOTs.

The current pace of change has its roots in human activity

Part of the core concern about climate change is the human potential to alter the climate through activities that are a result of our way of life and how we treat the natural environment. Carbon dioxide and other greenhouse gas emissions from human activity are largely responsible for the current pace of climate change. According to the IPCC, we have to cut global emissions in half from 1990 levels, with a peak in emissions by 2015, if we are to have a chance of avoiding a greater than 2°C rise in global temperature. A temperature rise beyond 2°C would mean more intense climate extremes and an even greater risk of catastrophe, including widespread drought and crop

failure, the spread of tropical diseases to an even greater geographical area and a near complete loss of coral reefs due to bleaching. Against this backdrop, the European Union, including the United Kingdom, has set a target to ensure that global temperatures do not rise by more than 2°C above pre-industrial levels.

Addressing climate change requires a global agreement for reducing greenhouse gas emissions as well as local commitment to action.

UK Overseas Territories are very vulnerable to the effects of climate change

Although UKOTs are negligible producers of greenhouse gases in global terms, they are very vulnerable to the effects of increased concentrations of these gases in the atmosphere. This stems, in part, from inherent economic, ecological and social vulnerabilities associated with the small size of their land masses, populations and economies. In addition, several of the ecosystems found in the territories, such as mangroves and coral reefs in the Caribbean and Pacific, sea ice biomes in the Antarctic, and Mediterranean-type ecosystems, are among those that the IPCC has identified as “most vulnerable” and “virtually certain to experience the most severe ecological impacts” of climate change. With the exception of the British Antarctic Territory and Gibraltar, the UKOTs are small islands, and small islands are expected to experience some of the most severe impacts of increasing temperatures.

Climate change is also increasing pressure on the rich biodiversity resources of the UKOTs. It is affecting habitats and ecosystems and could lead to a decline in the populations of some species. For example, coastal erosion, some of which is linked to climate change, is causing the



Sea ice cover has shrunk in the seas to the west of the Antarctic Peninsula but increased elsewhere in the Antarctic
Credit: Pete Bucktrout/BAS



Corals in the British Indian Ocean Territory killed by increased sea temperatures.
Credit: Charles Sheppard

Selected global warming changes and impacts in UK Overseas Territories¹



loss of turtle nesting sites in the Caribbean territories. This loss of plants and animals has more than just ecological consequences for the UKOTs. There are economic consequences that need to be considered. Several of the territories, particularly those in the Caribbean and the South Atlantic, depend to varying degrees on tourism. The environment plays a large role in the viability of this industry. Fisheries and agriculture are similarly very dependent on the environment. This means ecological changes, such as declines in populations of some plants and animals, can negatively affect these industries.

Because UKOTs and small islands are more vulnerable, it is particularly important that their citizens understand the hazards and risks associated with climate change and the actions they can take to make a difference. Examples of some of the observed changes and projected impacts of global warming on UKOTs are shown in the map above.

The time to act is now

Although climate change and its impacts may seem daunting, there are things UKOTs can do about them in their local context. Taking action now to prepare for climate change impacts will be less costly and more effective than remedial measures in the future. Addressing climate change now is an opportunity for the territories to build resilience in the face of their inherent vulnerabilities, improve natural resource management and physical planning processes, as well as adapt to changing climate conditions.

Understanding both the need and the opportunities for adaptation to climate change is fast becoming an essential requirement of both governments and the private sector of vulnerable countries. Good climate policy includes ensuring structures and systems are better able

to withstand change (adaptation) and taking measures to reduce the human impact on the climate system (mitigation).

UKOTs make a small contribution to warming and have little control over global mitigation, but they can play their part in the global reduction of greenhouse gas emissions in the following ways:

- enhancing energy efficiency;
- diversifying their energy sources and increasing reliance on non-fossil fuel sources of energy; and
- providing for the development and uptake of climate friendly technologies.

Contributing to the global reduction of greenhouse gas emissions is certainly a good thing for any member of the international community to do, but the benefits of such actions are also immediate to UKOTs in the form of reduced fossil fuel dependency, decreased dependency on imports and lower fossil fuel import bills.

The case for mainstreaming climate change adaptation in national policy

There is a very strong case for UKOTs to bring adaptation into the mainstream of national policymaking, planning and development. Adaptation is the only way to deal with the inescapable impacts of climate change. The reality of global warming means that development cannot be sustainable unless it factors in climate impacts and natural hazards and finds ways of reducing risks and minimising vulnerability. Several of the UKOTs are prone to natural disaster as part of their normal climate conditions. Effectively managing inherent risk is important in adapting to climate change.

Mainstreaming climate change issues into the national policy and planning process does not require a dramatic departure from all that has gone before and there are even many low- or no-cost actions that can be taken. Mainstreaming adaptation can be done in an incremental way by building on, and adjusting, existing policies, programmes, and structures. What is required is a commitment to dealing efficiently and comprehensively with current climate, environmental, social and economic needs and vulnerabilities in an integrated or holistic manner.

By addressing the development challenges that have led to the accumulation of hazard and human vulnerability, decision makers and planners will reduce the negative effects of extreme climatic events and natural disasters. This will significantly limit the immediate losses while reducing the future costs of recovery from climate events. For policy and decision makers, adaptation to climate change is a win-win proposition.

Everyone can do something about climate change

Addressing climate change in UKOTs is everyone's business, not just a matter for policy and decision-makers to deal with. Individuals, households, and the public and private sector can do their part to reduce their own vulnerability to the effects of climate as well as to reduce greenhouse gas emissions by making life style choices.

It is hard to predict with complete accuracy the full extent of how climate change will affect the UKOTs, but what is certain is that there is a lot at stake for them. Adopting a wait and see attitude towards climate will serve no one's interests in the long term. Climate change is a big issue with big impacts and potentially serious consequences. Adaptation and mitigation do not come cheap and without effort, but the cost of doing nothing will surely be higher.

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Documents in this JNCC series:

Climate Change in the UK Overseas Territories : An Overview of the Science, Policy and You - A look at climate science and policy and how global warming affects UK Overseas Territories.

Climate Change in the UK Overseas Territories : A Brief Overview of the Science, Policy and You - Executive summary of the document above.

Climate Change: An Overview for Politicians and Senior Decision Makers - Key issues for policy and decision makers to take into account in climate-proofing national policies and programmes.

Climate Change: A Practical Guide for Your Organisation - How businesses can reduce their carbon footprint.

Climate change in the UK Overseas Territories (DVDs): Part 1: Impacts and Part 2: Adaptation and mitigation - Short videos on climate science and policy and how global warming affects UK Overseas Territories.

Climate Change: A Practical Guide for You - Simple things individuals can do to reduce their climate impact.

Guidance for Biodiversity Conservation and Management in a Changing Climate in the UK Overseas Territories - Practical guidance for the practitioners who must plan and manage biodiversity in the face of climate change.



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