Impacts of climate change on the EU's islands

The Greens | European Free Alliance
in the European Parliament

STOP CLIMATE CHANGE
PLAY YOUR PART

« It is clearly in the EU's interest to continue fighting for climate protection! »

Introduction

Today, climate change is a reality. We are witnessing the changes in our weather patterns, climate events are getting more and more difficult to predict, and their impacts and damages harder to measure and manage. Not mentioning the growing costs of inaction, which will increase even further if our world leaders continue to downplay the climate crisis.

At the end of 2013, the Greens/EFA group in the European Parliament published a study by the Institute for European Environmental Policy (IEEP) to try and get a better picture of the impacts of climate change on all the EU's islands. These biodiversity hotspots, home to an outstanding diversity of landscapes, ecosystems and species, are more exposed to natural hazards including the impacts of climate change, but do not attract sufficient attention at EU level so far.

The aim of the study was to understand the real, tangible risks the EU's islands are currently facing, evaluate the costs of inaction in key areas (such as security, migration, biodiversity, loss/damage etc) and how this impacts the continental EU. The Greens want to raise awareness among policy-makers and citizens across the EU on how climate change already affects the EU's islands and how the need for political action at EU and global level is crucial and urgent.

The study 'Impacts of climate change on all European Islands' clearly demonstrates that it is in Europe's economic and social interest to continue reducing its greenhouse gas emissions but also to play a key role in the international climate negotiations to ensure that the world leaders deliver on their promise to maintain global warming below 2°C.

What is so special about EU islands?

The EU includes an enormous number of islands, all across the world. There are more than 50 000 EU islands, of which 500 are larger than 20 km2. There are 362 islands with a permanent population of more than 50 inhabitants.

The majority of islands have a weaker economic performance than the mainland with an average GDP per capita 80% below the EU average. The best performing islands are those specialised in activities such as tourism or trade.

EU islands are home to an outstanding diversity of landscapes, ecosystems and species. But this diversity is threatened in particular by their greater exposure to natural hazards, including the impacts of climate change. In addition to this, because of the state of their economy and their remoteness, it is much more difficult for these islands to absorb external shocks compared to mainland Europe.

Climate impacts on EU islands, why should the EU care?

Climate change affects us all. Especially given its large number of islands, which are spread all over the globe, it is clearly in the EU's interest to push for more ambitious domestic but also international greenhouse gases emissions reductions and speak with one voice at international climate negotiations.

Indeed, the potential consequences of climate impacts on these islands include damage to a wide range of different sectors, which will in turn directly affect the commercial, economic and social relations between the islands and their mainland counterparts. The potential costs for individual Member States and the EU as a whole might already be high and will rise even further if climate negotiations continue to proceed at the current snail's pace and if there is no increase in ambition at global level.

Fighting against global warming clearly first requires action at EU level. EU Member States need to understand the necessity to work collectively so that they can then face the challenge of convincing the other states in the world to cooperate.

The Reunion Island during Hurricane Dumile in January 2014.

What are the key climate threats faced

EU islands face four main climate threats

Higher temperature

During the last 40 years, temperatures have risen by +0.65°C to + 1.5°C, depending on the territory. Some scientists predict a temperature rise between + 1.4°C to + 3°C by the end of this century in the French territories.

This change of temperature will strongly affect agriculture, tourism, biodiversity, energy, transport and water supply.

Changed precipitation

Many EU islands have no groundwater supplies as all surface water is salinated. They thus rely solely on rainfall. Reduced rainfall on certain EU islands - such as on the Greek islands - will result in loss of agricultural land but also in more forest fires and increased litigation costs.

Importing fresh water - given the large distances from other landmasses - is very expensive and therefore not sustainable in the long-term.

by the EU islands?

Weather extremes

Although there is some uncertainty concerning mainland Europe, weather extremes are expected to worsen for the EU's islands. Global warming will lead to more frequent extreme temperatures or extreme rainfall.

For some Greek islands for example, it is projected that the annual number of days over 35°C ('heat wave days') will increase by about 10 between 2021 and 2050.

Sea level rise

Global sea levels have increased about 20 cm since 1900. The consequences for beaches are very severe in certain regions: In the Caribbean and Pacific Islands, more than 50% of the population live within 1.5 km of the shore.

In some French overseas territories, sea levels have been rising from under 3mm/year to over 5mm/year over the last 20 years. Scientists predict increases between 40 to 60 cm even up to 1 m in extreme cases by the end of this century.

Which areas will be the most

The nature of climate impacts will vary across islands depending on their location, the level of coastal development and infrastructure, the diversification of their economy, the type of their tourism industry, the health of their eco-systems and their own response to climate change.

There are four areas that will be particularly impacted by climate change with as result **increased loss and costs for EU mainland.**

Infrastructure

Climate change will have significant impacts on insular infrastructure including **water** supply and water treatment; **energy** supply, distribution and demand; **transport** including roads, airports and ports and the **built environment**.

Given that islands' economic and social activity is usually centred near the coastline, the risks to the islands' physical infrastructures is significant.

affected by climate change?

Biodiversity

70% of the EU's biodiversity is island-based. Islands and their surrounding near-shore marine areas constitute unique ecosystems, often comprising endemic plants and animal species. They host 2% of the world's vascular plant species and 15% of mammal, bird and amphibian species. Of the 724 recorded animal extinctions in the last 400 years, about half were island species.

This unique biodiversity is often the foundation on which key economic sectors such as agriculture and tourism are built. The impacts of climate change on biodiversity thus in turn affect a large number of economic sectors.

Tourism

Climate plays an important role in determining the length of tourism seasons, as well as their quality. Climate change is therefore expected to have both direct and indirect impacts on the tourism sector on many islands.

Global warming can adversely affect the industry through changes in temperature and rainfall, rising sea levels, inundation and flooding. All of these are likely to increase discomfort among tourists and eventually affect their choice of tourist destination. Moreover the attractiveness of many islands to tourists is closely linked to their natural resources. Loss of biodiversity and damage to the coastal and the marine environment - such as coral - risks reducing tourism demand.

Additionally, the spread of certain epidemics also impacts tourists' perception of safety and might lead them to avoid visiting certain tourism-dependent islands which were once considered as very attractive.

Other threats to the sector include an increasing number of extreme weather events, which can damage or disrupt tourist facilities and infrastructure and lead to water shortages.

Agriculture and fisheries

The impact of climate change on the agriculture sector will vary depending on the island. More frequent extreme weather events (heat waves, droughts, flooding…) will reduce crop production and pose a threat to livestock productivity.

Heat waves are projected to decrease crop yields due to heat stress and more frequent wildfires. Droughts will increase land degradation and the risk of livestock deaths and wildfires, while heavy precipitation events are expected to cause soil erosion and damage crops.

More weather extremes might also promote outbreak of diseases and transmission of diseases by animal carriers. Warmer temperatures will also affect the spread of diseases affecting animals themselves. Furthermore, the increase of frequency of extreme weather events will affect the stability of food supplies and access to food. The warming of oceans will also affect fisheries, with stocks likely to decrease significantly.

What implications for trade,

Climate change will also have wider economic and social implications for the islands.

Trade

The impacts of climate change on key economic sectors such as agriculture and fisheries will affect trade between the islands and EU mainland. A decrease in agricultural output will mean fewer food items being exported to the EU mainland and more food having to be imported. As an example, the Azores's production of dairy products accounts for 1/3 of Portugal's total production! In summer 2013 in Crete, unfavourable weather conditions affected the production of olive oil causing a decrease of up to 70%. In Greece, the potential loss of agricultural land between the years from 2040 and 2050 could reach up to 19% on the Greek islands.

Security

Climate change will also have a wide security-related impact on islands, including on **food security** (decreased crop yields, ocean acidification etc), **energy security** (higher demand for energy for heating and cooling infrastructure and higher risk of exposure of existing in-

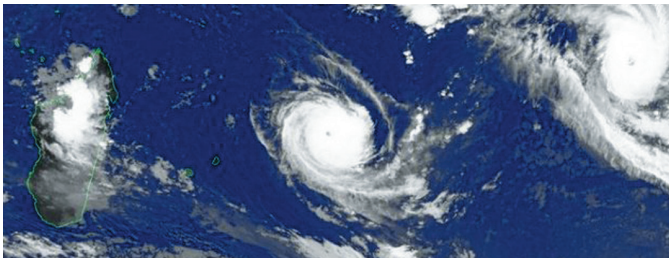
security and migration?

frastructure), **water security** (decreasing access to fresh water and increased coastal risks) and **physical security** (greater exposure to natural hazards, health related impacts).

Addressing these security-related impacts will in many cases involve significant costs.

Migration

Climate induced migration is strongly linked with environmental migration. Due to the islands' vulnerability and lower capacity for coping with climate impacts, many islands' inhabitants would gradually have to move for economic reasons, either seasonally or temporarily, or even permanently if the islands become uninhabitable (for example due to sea level rise or resource depletion). More dramatic, direct migration could also occur following severe, extreme weather events.



Conclusions

The impacts of climate change constitute a key risk for the EU's islands and - depending on the severity of the impacts - will lead to important costs for the EU Member States and the EU in general.

If global warming continues to be ignored and if our global emissions are not seriously reduced, consequences will be extremely serious for the EU's islands but also and mainly for the EU itself.

The EU's borders, which are not limited to the borders of its continent, cannot turn a blind eye to what is taking place in other, very often economically, socially and environmentally more vulnerable parts of the world.

Given the number of its islands and their location across the globe, it is clearly in the Member States' interest to unite on this issue and continue fighting for a reduction of greenhouse gas emissions at global level.

Moreover climate impacts, whether they take place in the Northern or Southern hemispheres and whether they occur on EU territory or not, will definitively impact mainland Europe, sooner or later. Yet the specific risks to more vulnerable parts of the world do not attract sufficient attention at EU level.

For the Greens, it is obvious that the challenge of climate change requires early and global action. Cooperation must be strengthened between EU Member States, the islands and the EU, as well as between the Northern and Southern hemispheres in order to minimise the consequences and increase the benefits of early and ambitious action for all.

Informations

Interested in obtaining more data or learning more about the impact climate change will have on Greek islands, Macaronesia, Dutch Antilles, La Reunion, French Polynesia or New Caledonia? Download the summary and the entire study on **'The Climate Impacts on All EU Islands'** here :

http://www.ieep.eu/assets/1292/Final_report_EP_CC_impacts_on_islands_FINAL_clean.pdf

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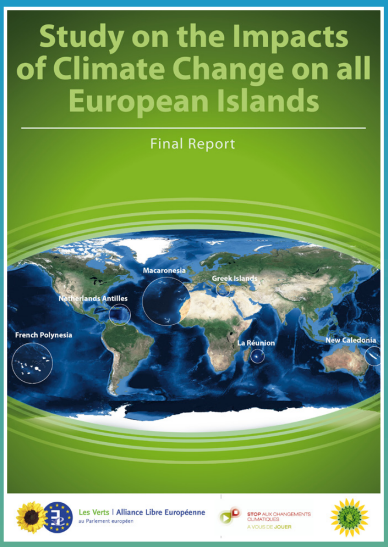

The **Study on the Impacts of Climate Change on all European Islands** was conducted by the Greens /EFA group. Find more information on the climate campaign of the group at **www.stop-climatechange.net**

Download the full study at :
http://www.ieep.eu/assets/1292/Final_report_EP_CC_impacts_on_islands_FINAL_clean.pdf