# The changing climate.

# Consequences of climate change.

**Portugal is one of the most vulnerable countries and may be very still with global warming.**

The global warming has had various reflexes in our climate, changes in levels of rainfall and the increase in the average level of seawater, caused by the melting of the polar ice caps are some of the consequences.

The majority of the population living in the coastal areas of mainland Portugal is aware of the consequences of climate change. The population of the coastal zones has been putting pressure on the government to adopt preventive measures for the average rise in seawater concerned with consequences of erosion and calls for more government intervention. In this sense, a study coordinated by the researcher Luísa Schmidt of the Institute of Social Sciences (ICS) of the University of Lisbon was carried out and is part of the 'Change' project, which aims to analyze social and environmental problems on the coastline. In a specific case, in Esposende, the Towers of Ofir are threatened by the violence of the sea; the inhabitants of about 200 apartments are advised to leave the buildings.

Climate change is increasingly part of the daily life of the Portuguese. The loss of territory to the sea and forest fires is some of the challenges and consequences that the Portuguese have encountered in recent decades. But is it just climate change? Unfortunately one of the main problems of our territory is the lack of planning of the territory that together with the climatic changes puts the populations more vulnerable.

According to studies led by the climate research center (CCIAM) of the Faculty of Sciences of Lisbon, these phenomena will worsen in the future. Rain may fall to more than 50% in summer or spring, leading to droughts in the country, and increasing 20% in winter, leading to floods. The phenomenon will affect 26 Portuguese municipalities. The municipalities have to prepare to face heat waves that can last 1 month and a half. With the reduction of rainfall, the flow of rivers will decrease, and since Barcelos is one of the municipalities with more agricultural area, according to the 2009 census, this decrease could affect agricultural production and, as a consequence, could affect livestock production and of milk.

The increase in temperature will lead to the melting of the glaciers, which in turn will lead to an increase in the average level of sea water, resulting in the need to retreat into the territory, as the sea rises above the coast, various populations will be submerged**.**

These heat waves caused an increase in the mortality rate, the appearance of insects carrying various infectious diseases such as malaria and invasive species, such as the water hyacinth, which is already a problem that affects the river of the county where we live, Rio Cávado.

The risk of increasing forest fires is one of the other scenarios we deal with in our county. With increasing temperatures and periods of drought, a forest cleaning policy should be adopted; otherwise the number of fires will increase.

In 2017, the districts of Porto (4,336), Braga (1,743) and Viseu (1,698) were the districts with the highest number of occurrences, in descending order. In any case the occurrences are of small size that do not exceed 1 hectare of burned area. In the specific case of the district of Porto the percentage of small fires is of 87%.

The most affected district, in what concerns the burning area, is Coimbra with 113,839 hectares, about 26% of the total area burned to date, followed by Guarda with 60,038 hectares (14% of the total) and Castelo Branco with 52,721 hectares ( 12% of the total).

Large fires are considered when the total area affected is equal to or greater than 100 hectares. As of October 31, 2017, there were 214 fires in this category that burned 412,781 hectares of forest areas, about 93% of the total area burned. It was a dark year in the history of forest fires in Portugal, where in addition to the loss of important and historic forest areas we wept 112 mortal victims.

Impacts at the level of fauna and flora should also be quantified, several studies have pointed to the danger of extinction of several species due to their inability to adapt to the new climate. In our county we have already dealt with some exotic and invasive species that have benefited from global warming. Water hyacinth (Eichhornia crassipes) has increased its proliferation capacity due to the extreme drought in our territory that has led to a drastic reduction of the flow of our river and consequently an increase in the concentration of nutrients. Several layers of water hyacinths were created along the river that put several populations of amphibians, mammals and fishers at risk.

Our climate is changing; extreme phenomena of precipitation and extreme drought will be more frequent in our day-to-day life and territory. There is an urgent need to sensitize the local population to adopt more sustainable and environmentally friendly attitudes as well as to pressure local authorities to adopt measures to adapt to climate change. Because by acting locally we are safeguarding global well-being.

Erasmus students