

Semi-arid climate in the ceará state/Brazil

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Abstract:

Climate changes in the world have been occurring over time in certain regions of the planet mainly due to the action of man himself, who destroys nature through pollution of rivers, lakes, dams and water sources in general, deforestation, poor sanitation etc., the destruction of nature can cause serious problems on the planet, such as melting polar ice caps, earthquakes, tsunamis, floods, hurricanes, advancement of oceans in coastal areas, storms. Climate researchers show that there is an interaction of the atmosphere and the ocean waters, which is known as El Niño, causes an increase in the temperature of the Pacific Ocean, resulting in a decrease of rainfall in Brazil's northeast, where the State of Ceará is located, thus causing climate changes. In this state, in which predominates semiarid land region, drought is over the years generating serious problems, such as desertification, and if it continues at this pace soon there will be regions fully formed by deserts. This paper analyzes the current situation in some areas of the State of Ceará that can reach an almost total lack of water, which would make the weather more severe as well as bring some serious impacts and issues, especially in how to make the water reach the affected localities, avoiding the rural exodus. The results show that some towns in the state can turn into desert, such as Canindé, region of the sertão of Crateús, and in the northern region of the state, having the municipality of Irauçuba as the more problematic.

Introduction

The oceans and the northeastern semi-arid region have a particularly important relation when it comes to climate. The oceans influence the lack of rains in Brazilian northeast and the short rains lead to desertification in the region. Drought is a natural phenomenon that affects human life as well as typhoons, hurricanes, cyclones, tornadoes, tsunamis etc.

Brazil's Northeast Region is on high alert, since the vulnerability of the caatinga biome to the effects of climate change is a strong push factor for desertification in the region (Noble, 2011).

The temporal and spatial variability of rainfalls are a striking feature of the climate of the Northeast of Brazil, over the semi-arid region (Marengo, 2011).

The drought reduces the productivity of large crops of soybeans and corn in Piauí. The cooling of the Pacific Ocean promises more rain in the northeast for the year of 2017 (Martins, 2016).

Researchers have been studying the impact of El Niño on the surface of the sea (Guangping, 2016; Wei Tan, 2016; Kim, 2014). El Niño normally impacts weather, ecosystems, and socioeconomics (agriculture, fisheries, energy, human health, water resource etc.) on all continents. The current strong El Niño has already trig-

gered drought in Brazil, southern Africa, southeastern Asia, and eastern Australia during December-February. Such conditions will be transitioned from boreal winter to spring but not to summer 2016, except for two regions: northern Brazil and southeastern Asia (Kogan, 2017).

The impacts of El Niño events vary but often lead to hot, dry conditions in south and eastern Australia, as well as in Indonesia, the Philippines and south-eastern Africa. The Indian monsoon rainfall, upon which millions depend, also tends to be lower than normal. Wetter than usual conditions are typically seen along the Gulf coast of the US, and the west coast of tropical South America (Carrington, 2017).

The impact of El Niño is great in the semi-arid region of Brazil.

Due to moisture coming from the Atlantic Ocean there is more rainfall in the State of Ceará coast than in the countryside of the state. The Pacific and Atlantic oceans influence rainfalls in the State of Ceará. The phenomenon of El Niño variations event affects several parts of the world.

The main objective of this study was to analyze the situation you are in some municipalities in the State of Ceará due to lack of rain caused mainly by the influence of the oceans and also show the desertification that has been increasing in the areas that were analyzed.

Methodology

This work was carried out through visits to some municipalities affected by the drought that is happening in the Brazilian semi-arid region, knowing from the influence of the Pacific Ocean in the rains that occur in the region under study, it was also made a bibliographic research on the issue. The municipalities analyzed where photographic records were made are the following: Irauçuba, Forquilha, Tamboril and Canindé.

Conclusions

The State of Ceará that brings the world closer to Brazil. With annual temperature of 82°F an area of 146348,3Km² the State of Ceará is in the northeastern semiarid land region of Brazil.

The lack of rain because the conditions of the ocean brings a great concern today in the municipalities studied in the State of Ceará.

Due to low rainfall over the years the municipality of Irauçuba today shows a growing process of desertification. The use of firewood as fuel in kilns of the ceramic industry in the municipality of Canindé has accelerated deforestation and increased desertification.