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Research in the News

CLIMATE CHANGE or EARTH WARMING

A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Climate change is the long-term alteration of temperature and normal weather patterns in a place. This could refer to a particular location or the planet as a whole. Climate change is currently occurring throughout the world as a result of global warming. Global warming is an increase in the planet's overall temperature due to the burning of fossil fuels, such as natural gas, oil, and coal. Burning these materials releases certain gases into Earth's atmosphere. These gases trap the heat from the Sun's rays inside the atmosphere, causing Earth's average temperature to rise.

The warming of the planet impacts local and regional climates. Climate is different from weather because it is measured over a long period of time whereas weather can vary daily, or from year to year. The climate of an area includes averages of seasonal temperatures, rainfall, snowfall, and wind patterns. Different places have different climates. A desert, for example, is referred to as an arid climate because it is dry year round. Other types of climate include tropical, which is hot and humid, and temperate, which has warm summers and cooler winters.

The effects of climate change make average temperatures and weather patterns more unpredictable. In an arid region, for example, this may mean higher than average temperatures and more severe or prolonged droughts. In a temperate region, it may mean that there is a lot of rain one year, and then very little rain the next year. These unpredictable weather patterns can therefore make it difficult to grow crops and maintain farmland in temperate zones because the temperatures and rainfall that farmers had come to expect can no longer be relied upon. Climate change has also been connected with other damaging weather events such as more frequent and more intense hurricanes, floods, downpours, and winter storms.

In polar regions, the warming global temperatures associated with climate change have meant ice sheets and glaciers are melting at an accelerated rate from season to season. This contributes to sea levels rising in different regions of the planet. Together with expanding ocean waters due to rising temperatures, the resulting rise in sea level has begun to damage coastlines as a result of increased flooding and erosion.

THE RMRDSA has identified climate change of key importance for research:

- » Modelling the net primary production of arid and semi-arid rangelands, 2012, Anthony Palmer
 - » Executive Summary -
 - » Popular Article - Satellite can help improve veld production estimates
 - » Popular Article - Modelling veld production
- » A decision support system for managing climate impacts and quantification of production risk on the financial feasibility of "cattle" farming, 2014, Bennie Grove
 - » Executive Summary - A decision support system for cattle farming
- » Improved production efficiency to reduce the carbon footprint of beef, 2014, Marthinus Scholtz
 - » Executive Summary - Improved production efficiency in beef cattle
- » Enhancing poor quality roughage utilization through supplementation and subsequent improvement in extensive ruminant production in South Africa, 2015, WA van Niekerk
 - » Executive Summary
 - » Popular Article
- » Innovative management to increase beef productivity in South Africa, 2016, SM Grobler
 - » Executive Summary
 - » Popular Article

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