

No escape from climate change for continent

CSIR expert predicts harsh changes in Africa and SA, even if global warming is capped at 3°C, writes CHANTELE BENJAMIN

SA's coastal cities are facing a real risk of flooding and parts of the country will be drier, hotter and stormier in the future — even if greenhouse emissions are kept at a manageable level.

Climate change expert Bob Scholes, who works for the Council for Scientific and Industrial Research (CSIR), made this prediction at a conference on global warming this week organised by Cambridge University.

He says different parts of SA will react differently to global warming, with evidence that the western part of the country from Cape Town to Namibia will get drier, while other areas will get wetter. "Because climate study is not an exact science we do not know if Joburg, for example, will get wetter or drier, but the western part of the country can expect to get 10% to 20% hotter," he says.

"We do know that the intensity of cyclonic events is likely to increase and that leads to the dumping of rainfall, which we are already seeing."

Scholes says an agreement due to be negotiated by world leaders at Copenhagen in December to cap global warming at 3°C may not be low enough.

Africa is one of the areas hardest hit because global warming does not take place evenly. Some areas are heating up faster than others due to already significantly altered weather patterns.

"We have seen periods of warming before, but what we now have is a climate on steroids leading to large storms and increased droughts," he says.

"A global rise of 3°C (as proposed by the Kyoto Protocol) will not affect the whole world evenly,

in Africa it might mean a rise of 4°C or 5°C, and even higher in the polar regions. For some areas the pain starts before 3°C, and Africa, the polar regions, the Amazon rain forest and coral reefs are among those areas."

Scholes warns that sea levels rising will affect coastal cities for the next 1 000 years, even if countries get emissions down to below half of 1990 levels by 2050.

"We face a great unadvertised, unspoken-about issue of sea-level rise," he says. "We predict a 2m sea level rise in this century, which will be a big problem for cities such as Durban and Cape Town."

"Rising sea levels will continue to be a problem for 1 000 years after gas emissions are brought to a manageable level."

Scholes says paleoclimatology, which uses ice sheets, tree rings, sediment and rocks to determine the past state of the climate system, shows there has never been this particular combination of circumstances in Earth's history.

SA is the only country in Africa ranked among the 20 countries in the world emitting 90% of the world's greenhouse gasses — it contributes 1,4% of global emissions. SA is responsible for 42% of Africa's emissions.

Studies conducted in SA suggest that some plant species are going to battle to adapt to the temperature changes.

SA has about 10% of all the plant species in the world, half of which occur nowhere else and research suggests that fynbos will be among the species threatened.

Changes in temperature, declining rainfall and extreme climate events like droughts are expected to affect small farmers,

but Scholes says it is unlikely that people will starve. "When it comes to total agriculture production there will be winners and losers because in some areas production will go up and in others it will go down, but if large tracts of land are used where conditions are good then Africa won't need to have a future of desperate food poverty."

The South African Weather Service says it is possible that a 10% increase in rainfall in some areas, coupled with an increase in carbon dioxide, will lead to a 10%-20% increase in wheat and maize production, while a 10% decrease in rainfall will be balanced by the rising carbon dioxide. The weather service cautions, however, that this is not a certainty. However, any change in ocean temperatures will affect fish resources.

Forestry can tolerate a small increase in temperatures but not rainfall, while livestock will be affected by high carbon dioxide in drier areas, which leads to less protein in the grass.

It is not all doom and gloom, however. Scholes and other scientists attending the conference say global warming presents opportunities for companies to invest in new technologies.

"It's not enough, though, to introduce technological solutions. They would get us halfway, we need to change technology and behaviour," he says.

Africa is taking the problem of climate change seriously, says water affairs spokesman Sputnik Ratau. On May 29, ministers from more than 30 African countries adopted the Nairobi Declaration at the African Ministerial Conference on the Environment in Nairobi, Kenya.