

## CLIMATE CHANGE: As World Warms, Southern Africa Swelters

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MEXICO CITY, Dec 7 (IPS) – Africa will be amongst the hardest hit regions of the world as the climate heats up, threatening the continent's food security, experts agree. If global temperatures rise 2.0 degrees C, southern Africa will warm an additional 1.5 degrees to a 3.5-degree increase on average.

Such temperatures could be reached as early as 2035. The Hadley Centre for Climate Prediction and Research in Britain recently advised that a 4.0-degree C rise in the global average temperature could be reached as soon as 2060 if the ever-increasing emissions of carbon dioxide and other greenhouse gases are not curbed.

"The prognosis for agriculture and food security in SSA (Sub-Saharan Africa) in a 4°C+ world is bleak," write the authors of a special issue of the Philosophical Transactions of the Royal Society to be published next month.

"A four-degree C world would be horrendous and must be avoided at all costs," said Philip Thornton of the International Livestock Research Institute in Nairobi, Kenya and co-author of a paper in the Royal Society special issue "Four degrees and beyond".

"This special issue is a call to action so we can avoid such a future," Thornton told TerraViva. Even if a new climate treaty came out of the final week of the 16th meeting of the Conference of Parties (COP) of the U.N. Framework Convention on Climate Change in Cancún, 2.0 degrees C looks inevitable, he said. No one is realistically expecting a comprehensive climate treaty for several years. This means southern Africa can expect to be 3.5 degrees C hotter and much drier in future, he said.

"It is going to get very difficult for rain-fed agriculture in this region," Thornton warned. Even 2.0 degrees C would be devastating for South Africa, Zimbabwe, Botswana and other neighbouring countries, said Lance Greyling a member of South Africa's parliament.

"We can't have more than 1.5 degrees C globally and that has been Africa's position since Copenhagen COP," Greyling said in an interview in Mexico City at the Globe International forum on climate change.

Water is a huge constraint on South Africa's agriculture and economy since 98 percent of freshwater resources are already allocated, he said.

A great deal of work will be needed to help farmers adapt to these new conditions, including the development of heat and drought-tolerant varieties, said Thornton. Learning from other regions with conditions similar to those expected in southern Africa in the next 20 to 30 years, as well as bringing seeds from those regions, has to be part of the adaptation strategy.

It also means that water-hungry crops like maize will need to be replaced by cassava, millet and sorghum. That involves social change since local people largely prefer maize and food preparation of those other crops is different and may be more difficult, he said. "It's a towering challenge," Thornton noted.

Climate projections for the rest of sub-Saharan Africa are less clear in a 2.0 degrees-plus world. Changes in seasons and rainfall patterns have already been occurring for the last 20 or 30 years. That's expected to continue. Higher temperatures mean crops need more water, and projections for precipitation, especially in dry regions, are that rainfall will be similar or less

abundant.

More importantly, rain will likely occur in fewer events with longer dry periods between, making agriculture very difficult as the planet heats up.

The paper concludes that the cost of reaching the Millennium Development Goal on food security – halving the proportion of hungry people by 2015 – in a +2°C world will be around \$40–\$60 billion per year. “Without this investment, serious damage from climate change will not be avoided,” it said.

By 2050, countries in the Sahel, the region south the Sahara desert, will experience crop-growing conditions for which there are no current analogues globally, said Sonja Vermeulen, deputy director for research at the Programme on Climate Change, Agriculture and Food Security launched last week in Cancún.

This is a 10-year, \$200 million research initiative cope with climate change impacts on agriculture. It hopes to reduce poverty by 10 percent in targeted regions and lower the number of rural people who are malnourished by 25 percent by 2020.

Those unprecedented climate conditions make it difficult if not impossible to grow food. There may be no possibility of adaptation without significant outside resources, Vermeulen said in a statement.

The mounting hazards of climate change are beyond the “current coping range” of either local communities or national institutions, agreed Janice Jiggins of the Wageningen University and Research Centre in The Netherlands. Africa’s losses could in theory be offset by gains in productivity in more northern regions like Canada and Russia – however, counting on that is a very risky strategy, she said.

“We cannot rely on redistribution of resources via trade as an ‘adaptive mechanism’,” Jiggins told TerraViva.

Previous studies have shown that under 2.0 degrees of warming, global grain prices will likely double by 2050, if not before. An additional 25 million more children could be malnourished, said Gerald Nelson, a researcher at the International Food Policy Research Institute in Washington.

Those studies only looked at changes in temperatures and precipitation and “the month to month variations were dramatic”, Nelson told TerraViva. The impacts on livestock have yet to be incorporated. If temperatures continue to rise by 3.0 and 4.0 degrees, it will be very hard to do anything to adapt in many parts of the world, he said.

Even with a +2 degrees C hotter world, the real scale of the problem of food security in Africa has been heavily underestimated and will require massive investments, Thornton concluded.

“It is completely unfair that Africa is not really responsible for the problem, and yet the greatest burden falls on their agriculture sector,” he said. “The last thing Africa needed was climate change.”

(END/2010)