

Climate Change Threatens World Food Production, Says New Study

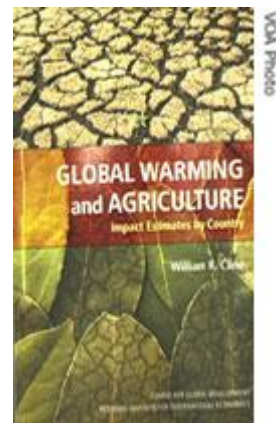
By Rosanne Skirble
Washington, DC
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The United Nations Food and Agriculture Organization (FAO) www.fao.org held a special session in Rome, Italy, [September 10-12] to discuss the impact of climate change on world food security. Experts say that if industrial emissions continue to rise as predicted, the warming temperatures, increased rainfall, droughts and floods resulting from global warming threaten to disrupt farming systems around the world, with developing nations expected to fare the worst. In Washington this week, a new country-by-country analysis describes in detail the impact climate change is likely to have on global agriculture.

By the end of this century, if current trends continue, world agriculture will be in serious trouble, according to economist William Cline, senior fellow with the [Center for Global Development](#) and the [Peterson Institute for International Economics](#). His new study, [Global Warming and Agriculture](#) finds that global agriculture potential could fall by about five to 15 or 20 percent as a result of global warming, if nothing is done by the 2080s. But, he says, that would mask a much deeper loss, "Something like 30 to 40 percent in India, and something like 20 percent or more in Africa and Latin America, because there would be some countries that could actually [experience] some gain."



World food production faces a serious decline within the century due to global warming emissions



Economist William Cline calls for aggressive action to reduce global emissions

The new study features estimates for 100 countries, regions and sub-regions. Cline says developing nations will be hardest hit simply because of their location. "Countries that are closer to the equator have higher temperatures already, and those temperatures are closer to or already beyond the best temperatures for agriculture."

While India will experience major losses in agricultural capacity, China and the United States, which are in similar latitudes, will suffer less. Other countries like Sudan and Senegal could face agricultural collapse — with estimates of more than 50 percent decline in food production.

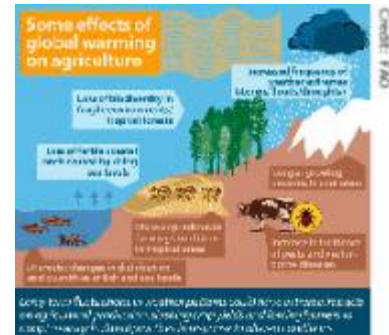
Some analysts say increased atmospheric carbon might actually boost plant production in some regions. But Cline says it is risky to assume that such gains could make up for losses elsewhere. He estimates that with a twice as much carbon dioxide in the atmosphere as we have now, there would be a 15 percent increase in agricultural yields. But, he says, that cannot be counted on. "A prudent approach is also to look at what would be the estimate if there were no carbon fertilization at all."

Cline adds that the impact of global warming on food production cannot be erased by irrigation, which is expensive, especially in water-starved regions. Nor can uneven climate effects be balanced by trade from more productive regions. "Maybe it is possible that Illinois can produce more wheat to send to Africa, but how is Africa going to pay for it?"

Cline's detailed country estimates are based on computer crop and weather models that link price data with temperature, rainfall and soil type. He says that while his results are consistent with reports by the United Nations' [International Panel on Climate Change](#), the forecast may be optimistic in projecting food production declines. "Because it does not include damage from insect pests. It does not include damage from increased incidents from very severe weather such as floods and droughts."

Cline argues for aggressive emissions controls. He targets that message to policy makers in industrialized countries, but also to leaders in developing nations who have been reluctant to cap their countries' global warming emissions. "I think that this study might help (with the) refocusing of that attitude to recognize that their public is at jeopardy as well." He would like to see a universal tax on carbon-based energy. The revenue he says could help, "pay for fiscal deficits, but also to develop alternative forms of energy."

These and other options were on the table at the FAO meeting in Rome where delegates called agriculture both a "victim and a culprit" of climate change scenarios. Global agriculture accounts for more than 30 percent of the heat-trapping greenhouse gases in the atmosphere. Experts say farming systems must be better managed to emit less, even as farmers take steps to adapt, as well as they can, to the earth's changing climate.



FAO urges action against global warming to protect global food supply