

Africa's Chocolate Meltdown: climate change could threaten cocoa farmers

(29th September 2011 - CALI, COLOMBIA) - Climate change not only threatens the production of staple food crops, but could transform the cherished chocolate bar into a luxury few can afford, according to a [new study released today](#).



Enjoyed by sweet-toothed consumers the world-over, more than half of the world's chocolate comes from the cocoa plantations of Ghana and Côte d'Ivoire, where hundreds of thousands of smallholder farmers supply lucrative Fair-trade markets in developed countries.

But the new research by climate scientists at the Colombia-based International Center for Tropical Agriculture (CIAT, by its Spanish acronym), reveals that an expected annual temperature rise of more than two degrees Celsius by 2050 will leave many of West Africa's cocoa-producing areas too hot for chocolate.

The report —the first of its kind into the likely effects of climate change on cocoa production in the region— anticipates that areas of cocoa suitability will begin to decline as soon as 2030, as average temperatures increase by one degree Celsius.

Warmer conditions mean the heat-sensitive cocoa trees will struggle to get enough water during the growing season, curtailing the development of cocoa pods, containing the prized cocoa bean —the key ingredient in chocolate production. The trees are also expected to struggle as the region's dry season becomes increasingly intense.

By 2050, a rise of 2.3 degrees Celsius will drastically affect production in lowland regions, including the major cocoa-producing areas of Moyen-Comoe, Sud-Comoe and Agneby in Cote d'Ivoire, and Western and Brong Ahafo in Ghana. Farmers in these areas are particularly vulnerable since cocoa production is often their primary source of income.

"Many of these farmers use their cocoa trees like ATM machines," said CIAT's Dr. Peter Laderach, the report's lead author. "They pick some pods and sell them to quickly raise cash for school fees or medical expenses. The trees play an absolutely critical role in rural life."

"Already we're seeing the effects of rising temperatures on cocoa crops currently produced in marginal areas, and with climate change these areas are certain to spread. At a time when global demand for chocolate is rising fast, particularly in China, there is already upward pressure on prices. It's not inconceivable that this, combined with the impact of climate change, could cause chocolate prices to increase sharply."

The report predicts that the ideal cocoa growing areas will shift to higher altitudes, to compensate for the higher temperatures. "The problem is that much of West Africa is relatively flat and there is no 'uphill'. This is a major cause of the potentially drastic decreases in cocoa suitability in the region," continued Laderach.



[E-Newsletter: Challenges & Innovations](#)

[News Releases](#)

[Blog](#)

[Seminars](#)

[CIAT Events Calendar](#)

[Open House](#)

[Resources for Journalists](#)



Furthermore, where there is land at higher elevations, the search for new cocoa-producing sites could trigger the clearing of forests, protected areas and important habitats for flora and fauna, the report warns.

"For these reasons it is essential that we focus on increasing the resilience of existing production systems as much as possible."

Keeping cool

While many smallholder cocoa farmers already use larger shade trees to help keep their cocoa trees cool, the report makes a series of additional recommendations. These include suggestions for alternative cash and food crops to help spread the risk of one crop failing, as well as implementing measures to minimize the increasing risk of threat of bushfires during the dry season.

Crop scientists will also need to move fast to head-off the threat to cocoa production and livelihoods, the report continues, by developing new, hardier cocoa crops capable of tolerating warmer, drier conditions. Renewed research into suitable irrigation systems will also be needed, together with the development of government-level policies to help cocoa farmers and the industry as a whole prepare and adapt.

"The good news is that the report quantifies the risks, and pinpoints particularly vulnerable areas in good time for effective action to be taken," continued Laderach. "Producers in affected areas will be protected if they are prepared to change, and if they have the knowledge, tools and institutional support to help them adapt."

The research, commissioned by the [Bill & Melinda Gates Foundation](#), used the combined results of 19 climate models to assess the impact of climate change on cocoa production.

It is the first of three reports into the likely effects of climate change on some of West Africa's key cash crops, with further studies into the impact on cashew and cotton due to be released in the coming months. The results of the cocoa study will assist decision makers in the multi-stakeholder World Cocoa Foundation Cocoa Livelihoods Project, a public-private partnership to help improve cocoa production and farmer incomes in West Africa. This partnership is funded by the Bill & Melinda Gates Foundation and 15 chocolate companies.

Read the full report: [Predicting the Impact of Climate Change on the Cocoa-Growing Regions in Ghana and Côte d'Ivoire](#).

*

Further Information:

Through research aimed at making agriculture more eco-efficient, the International Center for Tropical Agriculture (CIAT) contributes importantly to major global initiatives aimed at reducing rural poverty, strengthening food security, improving human nutrition and health, and achieving sustainable management of natural resources across the developing world. These initiatives are carried out by the [Consortium of International Agricultural Research Centers of the CGIAR](#) (formerly known as the Consultative Group on International Agricultural Research) and its numerous partner organizations, with support from the multi-donor CGIAR Fund.

CIAT leads an initiative called Climate Change, Agriculture and Food Security (CCAFS), which brings together all centers of the CGIAR Consortium along with the Earth System Science Partnership (ESSP) and their global networks of partners.

CIAT scientists have released a series of studies this year into the expected impacts of climate change on key crops, and ways for smallholder farmers to adapt production. These include reports on tea production in Kenya and Uganda, and there are forthcoming reports into the effect of climate change on West African cotton and cashew, and beans and maize in Latin America.

www.ciat.cgiar.org, <http://consortium.cgxchange.org/>

This report is based on research funded by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

[Download the News Release](#)

[Home](#) / [About Us](#) / [Contact Us](#) / [Library](#) / [Copyright Info](#) / [Jobs](#) / [CGIAR](#)

CIAT's website is better visualized downloading [Flash plug-in](#) and through Internet Explorer 7 browser
Copyright © International Center for Tropical Agriculture 2010. All rights reserved.