FROM FOREST TO MARKET:

Cocoa and Deforestation in the Value Chain

Contents:

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FROM FOREST TO MARKET

Cocoa

Authors
Ruth Malleson
Mike Paul

Design by
Ellis Main

Summary
Deforestation linked to cocoa production continues to be a serious problem which needs to be confronted by the chocolate industry. In regions such as Bahia, southern Cameroon, southwest Nigeria and eastern Ghana, cocoa was, and in some areas still is, grown in complex cocoa agroforests which help to maintain wildlife biodiversity. However, in other regions, including most of Côte d'Ivoire, cocoa is grown in monoculture with little or no shade. This type of cocoa monoculture is on the increase and has been a major driver of deforestation over recent decades. What's more, cocoa is being illegally produced inside protected areas of high conservation value forests.

Some of the key challenges associated with deforestation linked to cocoa production that need to be addressed by the chocolate industry include: ensuring all cocoa supplies are legally sourced rather than from illegal farms in protected areas; the ability to efficiently and effectively monitor deforestation and encroachment of protected areas linked with cocoa production; the decline in available land suitable for cocoa cultivation, due to climate change and the limited capacity to identify areas suitable for the future expansion and relocation of cocoa growing areas which do not lead to further deforestation.

The Importance of Smallholder Farmers
Global cocoa production relies almost entirely on 5 to 6 million smallholder farmers; indeed, around 70% of the world's total food is produced by smallholders. Smallholder engagement is crucial in protecting forests from agricultural conversion. Despite their essential role for the industry, many smallholder producers are involved in relatively unprofitable and unsustainable cocoa production with limited access to agronomic advice and financial support.

While there are schemes in place, such as Fairtrade, that address poor pricing and poor terms of trade as well as issues related to low productivity, they generally don't address the key challenges of monitoring deforestation linked to cocoa production; ensuring cocoa supplies are not produced illegally in protected areas; and identifying areas suitable for the future expansion of sustainable cocoa production.

References:

1 Weisse, M. and Petersen, R. (2015). Brazil and Indonesia Struggling to Reduce Deforestation. [Blog] World Resources Institute. Available at: http://www.wri.org/blog/2015/09/brazil-and-indonesia-struggling-reduce-deforestation. [Accessed 20.5.2016]

2 US Environmental Protection Agency (2016). Global Greenhouse Gas Emissions Data [online] Available at: https://www3.epa.gov/climatechange/ghgemissions/global.html. [Accessed 20.5.2016]

3 FAO (2014). Agriculture, Forestry and Other Land Use Emissions by Sources and Removals by Sinks. Climate, Energy and Tenure Division, FAO. Available at: http://www.fao.org/docrep/019/i3671e/i3671e.pdf. [Accessed 20.5.2016]

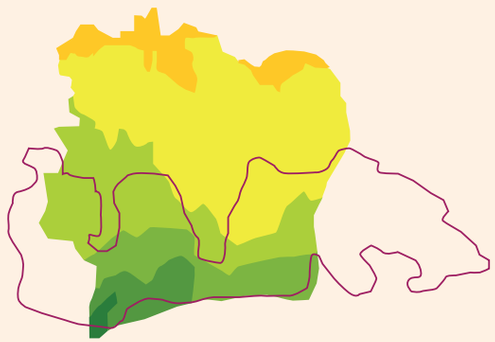
Cocoa Production in a Global Context

60% of all Cocoa production in the world happens in just Ghana and Cote D'Ivoire

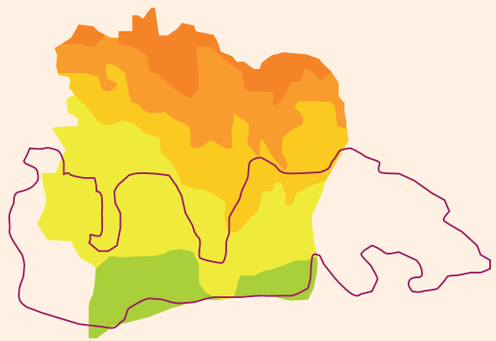
75% comes from Africa alone

Rest of the World (**25%**)

Effects of Temperature Change on Cocoa Growth

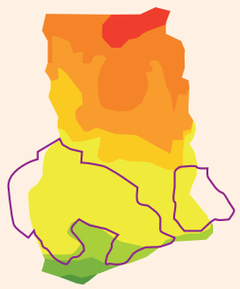


Cote D'Ivoire - 2015 Max Temperature

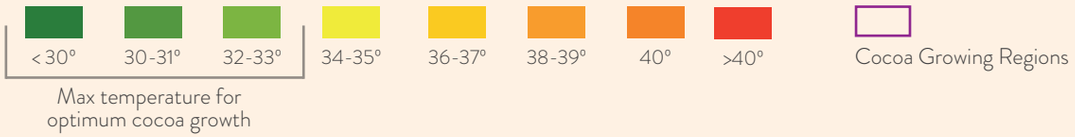


Cote D'Ivoire - 2050 Forecast

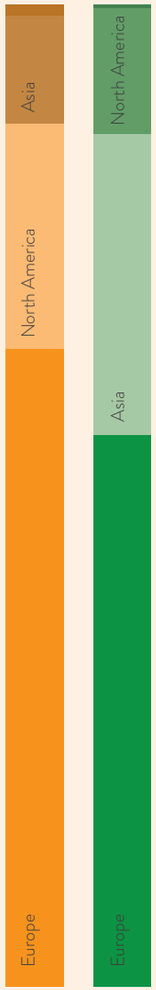
Ghana - 2015 Max Temperature



Ghana - 2050 Forecast

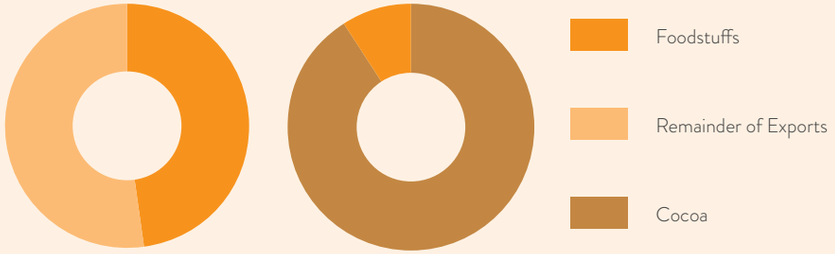


Cocoa Exports from Cote D'Ivoire and Ghana



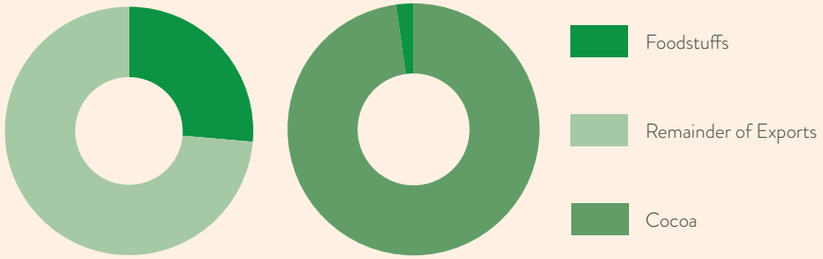
$5.6 Billion

of Cote D'Ivoire's export value is from cocoa products



$2.7 Billion

of Ghana's export value is from cocoa products



Global cocoa production relies almost entirely on 5 to 6 million smallholder farmers.

Challenges for Smallholder Farmers and Cocoa Companies

Declining cocoa production, due to over-aged and diseased cocoa trees, is a serious problem for smallholders. Chemical pesticides and fertilisers are commonly applied by farmers to alleviate pest and disease problems and improve soil fertility respectively. However, they are often poorly applied, leading to runoff into rivers, causing harm to wildlife and making drinking water unsafe for human consumption.

Illegal small scale gold mining, known locally in Ghana as 'galamsey', is also a growing problem in the cocoa growing belt - contributing to the decline in cocoa production, destruction of trees and soil as well as polluting water courses. Smallholders' cocoa farms are being destroyed as miners clear trees and dig large pits in search of gold.

Arguably the biggest challenge is finding suitable areas for the regeneration and expansion of sustainable cocoa agroforests outside protected forests in the cocoa growing belt and identifying areas where deforestation and mining are taking place. This is difficult to undertake without specialist help. Companies, governments and smallholders all need constant, accurate, transparent and up to date information flows to ensure that cocoa yields increase sustainably and illegal activities don't jeopardise smallholder production.

How to Overcome these Challenges

Clearly, public-private cooperation is required to coordinate information sharing between businesses, governments and smallholders. A combination of precision satellite observation, combined with local, on-the-ground information and existing business intelligence is the best way for the three main stakeholder groups to communicate, collaborate, plan and execute a better forest management strategy for sustainable cocoa production.

Businesses, governments and smallholders need to be informed about suitable areas for cocoa replanting, restoration and expansion in order to increase cocoa production in a sustainable way which does not lead to deforestation. Restoration and regeneration of existing farm plots is a key strategy to help reduce the clearing of forests for further agricultural development. Along with providing this information, there should be better guidance on the proper use of herbicides and pesticides to reduce run-off, and accurate information on illegal small scale gold mining activities.

Use of satellite and drone earth observation data will be key to executing the strategies to overcome the challenges that cocoa growers face. Timeliness is key to reducing the spread of pests and diseases, identifying and stopping deforestation, finding new areas suitable for cocoa production and halting illegal gold mining activities. This rapid analysis and sharing of data can only be realistically achieved using downstream earth observation software.

Ecometrica's Solution

Measurement of forest change (i.e. loss of tree cover or disturbance and re-growth) is of central importance for regional and national forest monitoring systems and for monitoring deforestation due to logging and agricultural development. But the costs of some forms of monitoring can be prohibitive; what's needed is earth observation technology that can collect information over relatively large areas, repeatedly, at fine spatial resolution and at reasonable costs.

Ecometrica's unique combination of award-winning web-based software and expert support from our renowned analyst team is set up to address the key challenges of cocoa production, including deforestation and declining productivity, while also considering the livelihoods of smallholder farmers.

Ecometrica's Platform and analysts are always on hand to help you get the results you need.

At its core, the Ecometrica Platform uses ultra high-resolution earth observation data from satellites, drones and ground sources, updated in near real-time, to provide constant updates and instant access to vital information on cocoa production and deforestation linked with cocoa production.

In addition to our award-winning software platform, working with Ecometrica gives you the added benefit of in-country expertise and a team of expert earth observation analysts to look after your account. Our work leading the UK Space Agency's Forests 2020 project has seen us working on the ground in Ghana, addressing some of the key challenges of forest monitoring, such as the problem of persistent cloud cover that prevents satellites from detecting deforestation over most of the humid forest zone, where a significant amount of cocoa is grown and the limited ability of satellites to differentiate between forests and cocoa agroforests. Our extended network of partners cover the entire African cocoa growing region. Plus, the analysts who built and maintain the Ecometrica Platform are on hand as your personal account management team to help with entering data, moving through your project, and getting the results you need.

Utilising satellite and drone earth observation data will be key to executing the strategies to overcome the challenges that cocoa growers face.

Why work with Ecometrica?

Ecometrica makes complex global risk mapping simple, transparent and accessible to the people who really need it. We already work with large listed companies, governments and space agencies all over the world to help make forest and supply chain stewardship a mainstream activity. Here's what you get:

+ Streaming satellite data
Feeds from space directly to your laptop

+ Work with space agencies
We have links into NASA, ESA and UKSA

+ Live, ongoing monitoring & alerts
Instant information on your target areas

+ Simple interface that anyone to use
No expertise needed - just log in and go

+ Sophisticated calculations engine
Complex algorithms run behind the scenes

+ Direct email reports
Regular updates straight to your inbox

+ Sustainability scoring
Clear metrics and analytics on your activities

+ Audit ready outputs
All our reports will pass pre-audit checks

+ Expert analysts on hand
Dedicated support from real, named people

+ An award-winning approach
We're on the Deloitte Fast 500 and FT1000

Get in touch:
info@ecometrica.com

ecometrica

ecometrica
press

ecometrica.com