Cocoa: Driver of deforestation in the Democratic Republic of the Congo?

Working Paper No. 65

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Hilde de Beule
Laurence Jassogne
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Abstract

The Democratic Republic of the Congo (DRC) accounts for the largest part of the Congo Basin forest: two-thirds (some 155 million hectares) are forested and 69 percent of which is dense humid forest. With a surge in world market commodity prices for cocoa in 2008 and a steady 2-5% annual increase in global demand, incentives to expand cocoa production are significant. This study determines the role of cocoa in the RDC in terms of current deforestation, identifies actors, and estimates future expansion.

Although cocoa in occurs in eight regions in the DRC, authors focused on the four major growing regions in this study, using a rough estimation to get an "order of magnitude" of cocoa as a driver of deforestation. The authors found that cocoa expansion could lead to the loss of 176-395 square kilometres of forest in the next decade, strongest in the Mambasa region and in Equatorial Province surrounding Mbandaka, Bikoro and Lukolela.

However, migration of internally displaced people, production of food crops, and illegal logging are likely more severe drivers of deforestation in the Mambasa region. Deforestation caused by cocoa growing in Equatorial Province will largely depend on rejuvenation of existing fields.

Keywords

Cacao; cocoa; Congo; deforestation; farmers; REDD+.

About the authors

Hilde De Beule (ASADI lead consultant) led this study with backstopping from International Institute of Tropical Agriculture (IITA) scientists Laurence Jassogne and Piet van Asten and support from CGIAR Research Program on Climate Change, Agriculture, and Food Security Pro-Poor mitigation Theme Leader Lini Wollenberg.

Hilde de Beule is a specialist in sustainable agriculture in the tropics based in Uganda working on smallholder based export production systems for the past 14 years. She holds a MSc degree in Science and Biotechnology from the CTL HoGent in Belgium with a specialization on Tropical Agriculture. The focus of her work during the last seven years has been mainly on the development of economical and environmentally sustainable cocoa agro-forestry systems and businesses in the Democratic Republic of Congo and the neighboring countries. Her consultancy company 'Aquaculture and Sustainable Agriculture Development Initiatives' (ASADI) is based in Kampala, P.O. Box 71281, Uganda.

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CCAFS brings together the world's best researchers in agricultural science, development research, climate science and Earth system science to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security.

The report endeavours to overview cocoa growing in the Democratic Republic of Congo and its potential for expansion in the coming decade. The country is vast and the infrastructure is in a sorry state. Hilde managed to visit three out of four of the most important cocoa areas. We are aware that there might be other minor production regions that we have missed.

The authors extend their gratitude to the Congolese NGO *Initiative de Développement pour l'Agroforesterie Durable* (IDAD), not only for assisting us in undertaking the study but also for guiding us safely through all the areas visited. Without their input, we would not have been able to achieve this in the timeframe (Aug-Oct 2013) given.

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Acronyms

AFDB	African Development Bank
CABEN	*La cacaoyère de Bengamisa*
CCAFS	Climate Change, Agriculture and Food Security
CF	Congolese Franc
DRC	Democratic Republic of the Congo
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH*
IDAD	*Initiative de Développement pour l'Agroforesterie Durable*
IFDC	International Fertilizer Development Center
IITA	International Institute of Tropical Agriculture
INERA	*Institut National pour L'Etude et la Recherche Agronomique*
MT	Metric Ton
ONC	*Organisme National de Café*
REDD	Reducing Emission from Deforestation and Forest Degradation
SCAM	*Société de Cultures et d'Industries Agricoles au Mayumbe*
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund
ZSL	Zoological Society of London

Introduction

Increased production of agricultural commodities such as oil palm, rubber, soybean and beef is considered among the major drivers of deforestation of the tropical humid forest zone in Southeast Asia and Latin America. West Africa lost most of its original humid forest coverage over the past decades, and cocoa is considered amongst the major drivers of deforestation in countries like Ghana and Côte d'Ivoire. In these countries, a decline in productivity in the traditional cocoa production regions in the eastern parts of the countries accelerated deforestation, as cocoa production gradually shifted towards the. Using slash and burn practices, freshly deforested areas provided better soil fertility and therefore supported relatively good cocoa productivity for the first 10-15 years. West Africa continues to supply approximately 70% of the global cocoa production. Intensification of cocoa production is still largely absent, with the exception of Ghana where the government invested in an intensification program using external (fertilizer) inputs.

With a surge in world market commodity prices for cocoa in 2008 and a steady 2-5% annual increase in global demand, incentives to expand cocoa production are significant. Unfortunately, little forest remains in West Africa, and the remaining patches are increasingly limited to conservation areas not accessible to farmers. Meanwhile, deforestation rates in Latin America and Southeast Asia have decreased 25% over the past decade, due in part to government reform and increased conservation awareness. The question arises whether required increase in world cocoa production will not lead to expansion into relatively virgin territory, including the Congo basin.

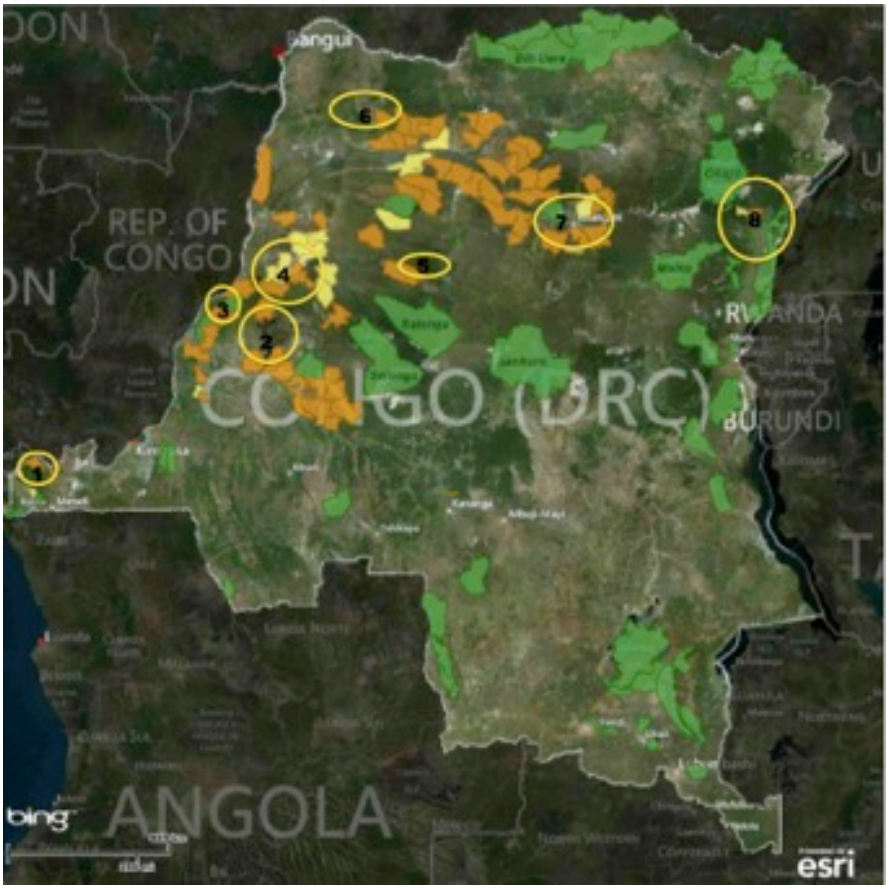
With this hypothesis in mind, CCAFS provided support to IITA to conduct an exploratory study on the dynamics of the cocoa sector in the Congo basin. Signals from cocoa trade suggested that Congo's cocoa production significantly increased, and cocoa production may have expanded into new areas. This study maps the cocoa production quantities, areas, and actors in the Congo basin, focusing on identification of areas of cocoa expansion and cocoa's relationship with deforestation.

1 Background

1.1 Location of forest and cocoa-growing areas

The Congo Basin forest extends over much of Central Africa from the Atlantic Ocean's Gulf of Guinea to the mountains of the Albertine Rift in the East. Covering about 1.8 million km2, the Congo Basin forest constitutes the second largest area of contiguous moist tropical forest left in the world and approximately one-fifth of the world's remaining closed canopy tropical forest.

The Democratic Republic of the Congo (DRC) holds the largest part of the Congo Basin forest. Around two-thirds of the country (155 million hectares) is still covered by forest, 69% of which is dense humid forest. Forest covers all provinces with the exception of the southern part of Bandundu, Kasai, and Katanga.



Map 1: DRC forest: Concessions (orange), natural reserves (green), and cocoa-growing areas (yellow). Source: www.wri.org

Cocoa was introduced to the Congo in the late nineteenth and early twentieth century. By 1914, the Congo was exporting 500 metric tons (MT) of cocoa produced in plantations in Bas Congo, Equatorial Province and near Kisangani in Oriental Province. None of these plantations are operational today, although there have been efforts to revive the plantation near Kisangani. Map 1 indicates the areas where cocoa can still be found at present:

1. Bas Congo in the area North of Tshela
2. Bandundu Province in the area surrounding Lake Mai Ndombe

3. Equatorial Province in the area surrounding Lukolela
4. Equatorial Province in the area surrounding Mbandaka, Bikoro and Kalamba
5. Equatorial Province in the area towards Befale, east of Boende
6. Equatorial Province in the area surrounding Gemena (exact location unknown)
7. Oriental Province in the area surrounding Yangambi
8. Oriental Province and North Kivu, starting in the area around Mambasa in Oriental Province and stretching down along the Virunga National Park past Beni, approximately 90 km southwest of Butembo

Not all of these regions are still active in cocoa growing, regardless of the fact that cocoa trees are present. Since the infrastructure in DRC has deteriorated considerably, some areas are simply too remote and quantities too small to justify transport of the cocoa. The authors are aware that there might be other cocoa-growing areas in DRC that were missed.

1.2 Aim of this study

This study aims to document the current trends related to cocoa expansion in the Congo through:

1. Documenting the spatial area and locations of current cocoa cultivation in forest areas
2. Quantifying trends for expansion and drivers of cocoa-related conversion, especially supply chain links to investors, government permits, companies and their policies (or lack of policies) for sustainable cocoa, and consumers. Any innovations related to sustainability and limiting forest clearing should be noted.

2 Methodology

Authors conducted a literature study on qualitative and quantitative data on deforestation in the DRC, on agriculture-driven deforestation in particular, and for deforestation with cocoa production as driver.

Additionally, the author conducted field visits in four cocoa-growing regions:

- North Kivu: Beni area bordering the Virunga National Park
- Oriental Province: Mambasa area, largely covered by the Ituri forest
- Bas Congo: north of Tshela bordering the Enclave de Kabinda of Angola
- Bandundu Province: Riparian zone of Lac Mai Ndombe surrounding Inongo, Selenge and Isongo

Map 2: Cocoa-growing areas studied. Source: www.wri.org

De Beule interviewed 36 farmers in three of the four regions (See Table 1.2-1). No interviews were carried out around Beni, as security in the field could not be guaranteed. The interviews collected brief information on family structure, social profile, and food and cash crops grown by the farmers, with an emphasis on cocoa production (see Annex 1: structured questionnaire).

Table 1: Summary of interviews conducted

Region	Interviews conducted	Comment
Beni	0	Insurgency
Mambasa	14	/
Bas Congo	15	/
Bandundu	7	Limited due to distribution of cocoa-growing areas around the lake.

Hilde De Beule led the study with the support of the Congolese organisation Initiative de Développement pour l'Agroforesterie Durable (IDAD) and their lead consultant, Salomon Katembo Kitsa. The input of IDAD was crucial, especially in the politically unstable areas. Additionally, Salomon Katembo Kitsa made a field visit to Equatorial Province in the area surrounding Mbandaka, Kalamba, Bikoro and Lukolela. Due to limited time and financial means, he was unable to carry out interviews, but the visit provided an overview of cocoa-related activities there.

3 Results

3.1 North Kivu

Map 3: Area around Beni where cocoa is grown in yellow. Source: www.wri.org

3.1.1 History of cocoa in North Kivu

Cocoa is a relatively new crop in North Kivu, present in the Nobili–Watalinga area, which is enclosed between the Virunga National Park and Uganda, since the late 1960s. The province mainly has been dominated by coffee production for export; however Coffee Wilt Disease destroyed up to 80% of the Robusta coffee in the region in the early 1990s. The first successful trials on cocoa growing were carried out in 1998. A GIZ/DOEN foundation-funded campaign to promote cocoa growing took place between 2008 and 2011. As a result of this promotion, cocoa is now grown in following areas:

- Manguredjipa: area about 90 km southwest of Butembo
- Rwenzori/Mutwanga: area east of Beni, enclosed between the Virunga National Park and Mount Rwenzori
- Beni: areas surrounding Beni and alongside the roads N4 and N44
- Nobili–Watalinga: intensified production and new plantations

Cocoa as a cash crop is now well established and forms a very important source of income for the region. Insurgencies, in the Manguredjipa area and recently north of Beni (May-June 2013), discourage the

development of the crop. Rebels have been present in the Virunga National Park for decades; however, political dynamics have changed in the last year, resulting in the kidnapping and killing of innocent civilians. Due to this, several farmers in that region have left their fields and moved to town in search of security and other sources of income.

3.1.2 Actors

Farmers

There are currently more than 10,000 farmers in the area surrounding Beni, with the biggest concentrations around Beni and in the Watalinga–Nobili enclave. Cocoa plantations average one hectare in size, except for the Manguredjipa area where the plantations are closer to half a hectare. Over 80% of farmers are organically certified and grow cocoa in an agro-forestry system that contains 50-80 shade trees per hectare. The average age of the cocoa fields is four to five years old meaning that they were planted in 2008. (Source: Baseline Survey IDAD, Hilde De Beule, December 2012). Older trees are found in the Watalinga area, where cocoa has been present for at least two decades. The field have been cleared between 1950 and 2011 with the average clearing date in 1993 or twenty years ago. The vast majority of the land was under forest cover (72%) at the moment of clearing, either primary (45%) or secondary forest (27%). (Source: Baseline Survey IDAD, Hilde De Beule, December 2012).

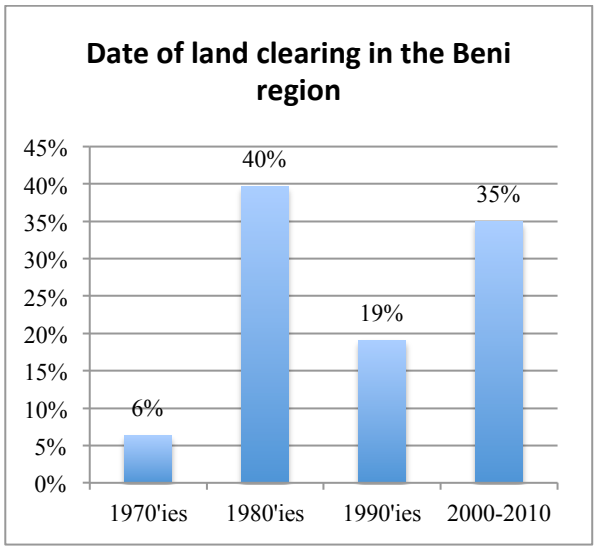


Figure 1: Percentage and timing of land clearing in Beni. Source: Baseline survey, December 2012

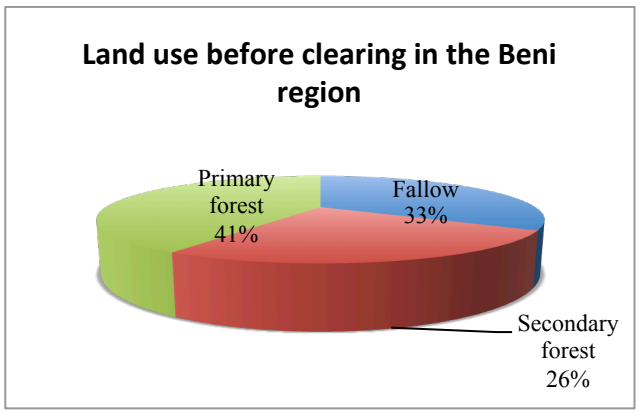


Figure 2: Land use before clearing in Beni. Source: Baseline survey, January 2012

Buyers

Currently, there are four stable cocoa buyers in the region and some middlemen. The cocoa bought by the latter is sold to Congolese companies, and some is transported to Uganda. The four buyers are:

- Esco Kivu Ltd: British and Swiss nationals created Esco Kivu Ltd. in 1970 focusing on poultry and coffee prior to political unrest in the early 1990s. Esco Kivu carried out the first cocoa trials in the region in 1998 and was later supported in the cocoa promotion by a GIZ/PPP project. The company buys up to 80-90% of the crop, except in the Watalinga area where Uganda-based companies are competing. Esco Kivu's extension system promotes organic and sustainable cocoa. They are certified organic and Utz-certified, and a very small part of the production is certified "Fair For Life" by IMO.
- Le Jardin: Le Jardin is a small German-Congolese-owned company created in early 2000 and focusing on cocoa, dried fruits, chilis, and vanilla. The company is certified organic and is in the process of obtaining "Demeter" certification. The quantities of cocoa traded by this company represent less than five percent of the total crop.
- Guillaume: Guillaume is a local businessman who trades in several items and has in the last three years also bought cocoa. He has constructed several cocoa stores in the regions and exports an estimated 300-500 MTs annually. His company does not hold any certifications, nor does it participate in any programs.
- PLANOKI / Great Lakes Coffee Ltd / Ecom group: Great Lakes Coffee Ltd. is a Uganda-based coffee trading company. Sales Director Andreas Nicolaides informed De Beule that they the Ecom Group requested Grate Lakes to start sourcing cocoa on their behalf. This will be done via PLANOKI, the Congo-based company of a relative of the Sales Director.

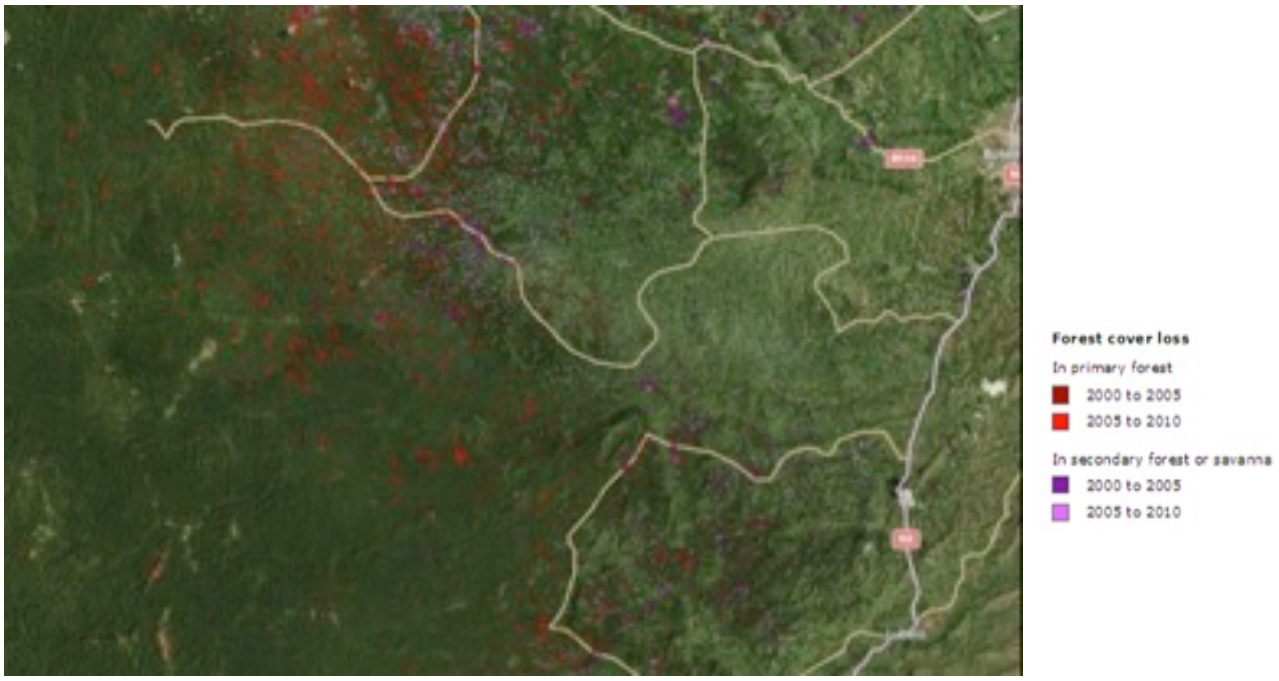
Other organisations

Beni and the cocoa growing region north of it border the Virunga National Park. Nature conservation organisations such as the Wildlife Conservation Society (WCS), World Wildlife Fund (WWF) and Zoological Society of London (ZSL) had offices in Beni up until 2012. All of them have closed their offices, and only ZSL maintains a representative in Beni town. This is due to a lack of funding for the region on the one hand, and the increasing level of insurgency on the other.

3.1.3 Drivers of deforestation

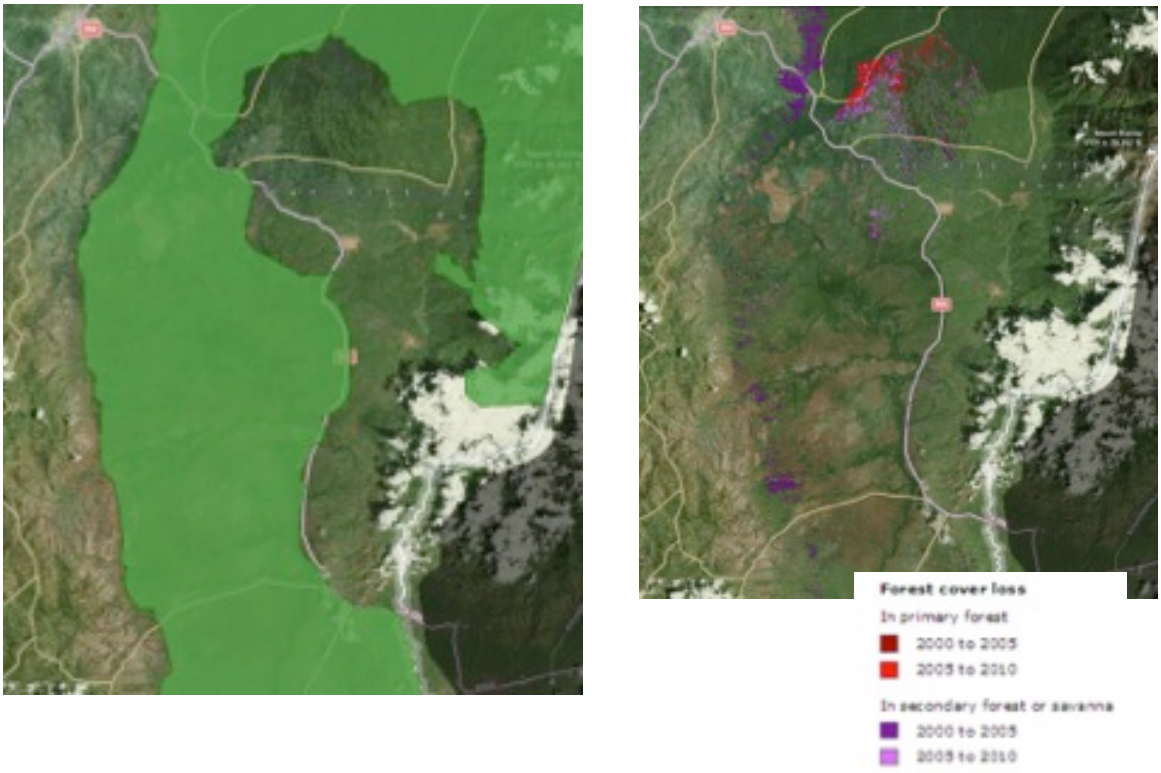
No interviews were carried out in the area surrounding Beni due to the insurgency. Therefore, it's rather difficult to quantify deforestation in the area. It's necessary to differentiate between the four regions.

1. The **Manguredjipa area** still has good secondary and primary forest cover and is known for its artisanal gold, diamond and mineral mines. The region has been the stronghold of several rebel groups for decades and has an extremely bad road network, making it rather unsafe and challenging to source goods from the region. This can be seen as the main reason for the limited expansion of cocoa growing. The main reason for deforestation in this region is food production, followed by logging and artisanal mining.



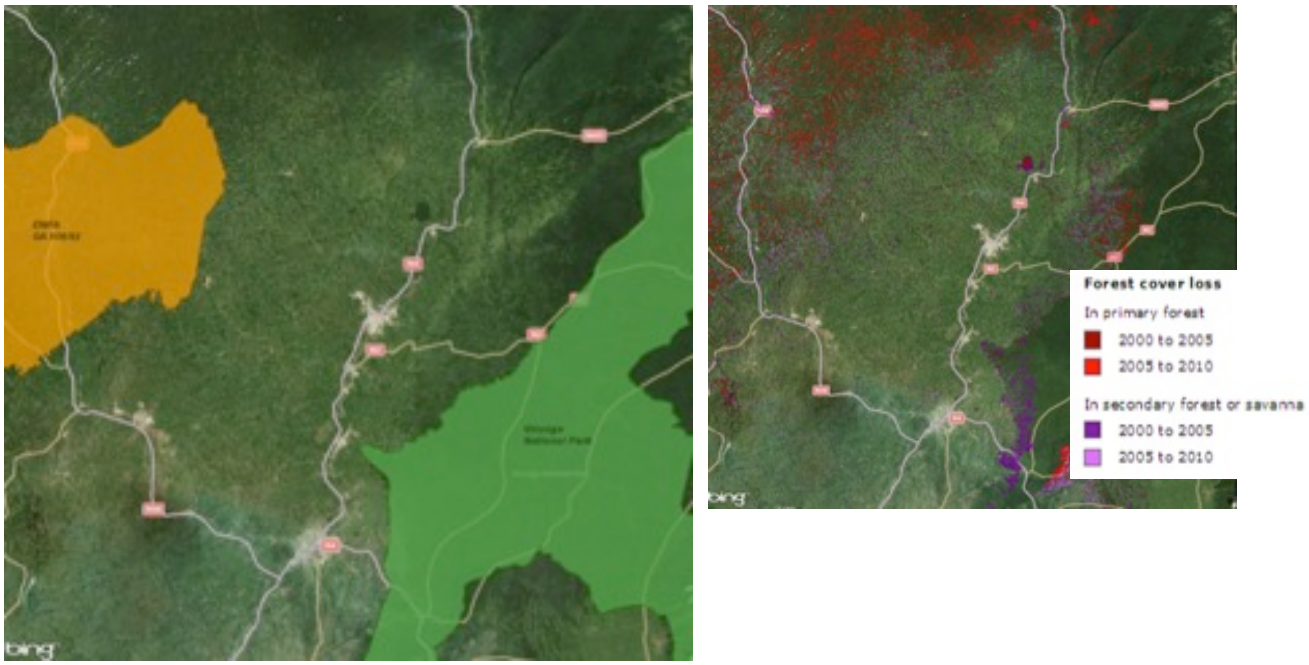
Map 4: Forest loss since 2000 in Manguredjipa, southwest of Butembo. Source www.wri.org

2. The **Rwenzori plain** consist of 8,000 hectares, the vast majority of which is fallow land, mainly old palm plantations. The plain lacks sufficient rain for food crop production, as water sources in the mountains seep underground before flowing to the Semliki River, leaving the area dry. There is some secondary forest surrounding villages (Mutwanga, Mwenda, Lume) close to the flanks of the mountains, and remaining primary forest surrounding the border of the Virunga National Park on the northeast side of the plain surrounding Halungupa. Both cocoa and food crops, mainly rice, are major drivers of deforestation in this area. The population density is increasing steadily and a high rate of clearing has been observed over recent years. This is critical, as the secondary and primary forest outside the Virunga National Park serves as a buffer area for the Park itself.



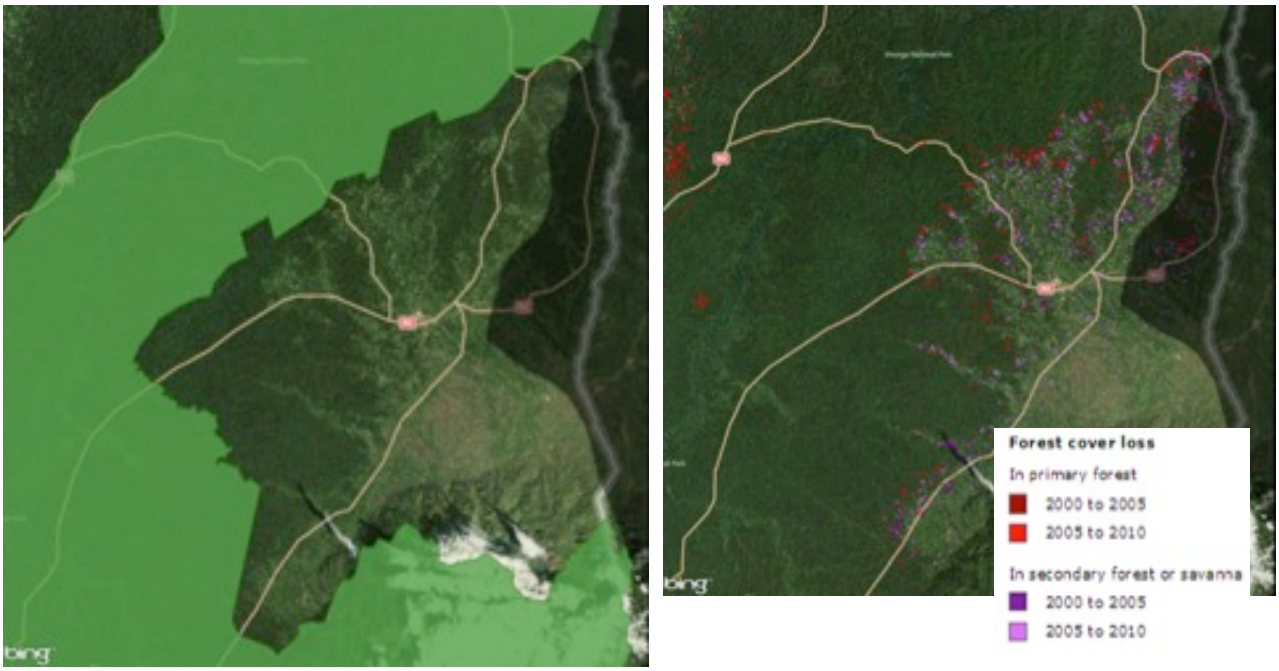
Map 5: The Rwenzori-Mutwanga plain and forest loss since 2000. Source: www.wri.org

3. The population density around and north of **Beni** is steadily expanding. Little primary forest is left in this region except for bordering and inside of Virunga National Park. Authorities recently handed an area inside the park, which had been the subject of discussion, back to the population.



Map 6: Beni area and forest loss since 2000. Source: wwww.iri.org

The **Watalinga** area has significant forest, mainly in the vicinity of the park boundaries. Deforestation for food and cocoa growing is limited due to the lack of infrastructure and the presence of rebel groups in the park and forest areas.



p 7: Wataling area and forest loss since 2000. Source: www.iri.org

3.2 Oriental Province

3.2.1 History of cocoa in Oriental Province

Cocoa growing never fully developed in Oriental Province, although it was promoted since the colonial era and the region has excellent agricultural and climatic conditions. Cocoa was planted under controlled forest cover from which species harmful to cocoa had been removed. In 1979, the African Development Bank (AfDB) financed the development of a 2,000 hectare cocoa plantation in Bengamisa called CABEN. The project aimed to increase Congolese cocoa production through the establishment of the commercial plantation and development of 1,750 ha of smallholder plantations. CABEN failed to achieve its goals, and at present the plantation is abandoned and up for investment. Small amounts of cocoa are being harvested from the remaining trees and are being transported for sale in Beni, approximately 800 km further to the south.

Map 8: Areas around Mambasa town where cocoa is grown (yellow). Source: www.wri.org

The aforementioned re-planting program financed by GIZ led to the promotion of cocoa in the region surrounding Mambasa. Cocoa growing takes place in the wider area along the N44 that runs from Beni, via Biakatu, through the ENRA concession and past Teruri to Mambasa. Cocoa plantations are also present in the wider area along the N4 that runs from Beni via Oicha, Eringeti, Komanda, Lolwa and Mabukulu to Mambasa.

Currently, cocoa growing is promoted in the areas beyond Mambasa towards the Okapi Faunal reserve and along the N4 towards Kisangani. This region is, with the exception of the areas along the road, under cover of the Ituri rainforest.

Promotion of cocoa growing in the Mambasa region started in 2008 and planting is still on going. Fields are gradually coming into production. It is to be expected that other buyers will settle in once the tonnage increases.

3.2.2 Actors

Farmers

The area surrounding Mambasa inclusive of the part along the Eringeti–Komanda road accounts for more than 5,000 farmers, and fields are still being developed. Interviews were carried out everywhere except the Eringeti territory due to insurgency in the neighbouring region. A total of 14 questionnaires were filled, leading to the following observations.

The average age of the farmers is 51 years. Ten out of fourteen farmers originated from the Butembo–Lubero region, and all of the farmers in the Komanda area migrated in the last three years. Farmers in the region have on average 2.8 hectares of food crops and 2 hectares of cocoa. The vast majority of these fields (87%) have been cleared since 2006, and the remaining 13% were cleared fourteen years ago. Three-quarters of the cocoa fields have been developed in the last three years. All fields were under forest cover before clearing.

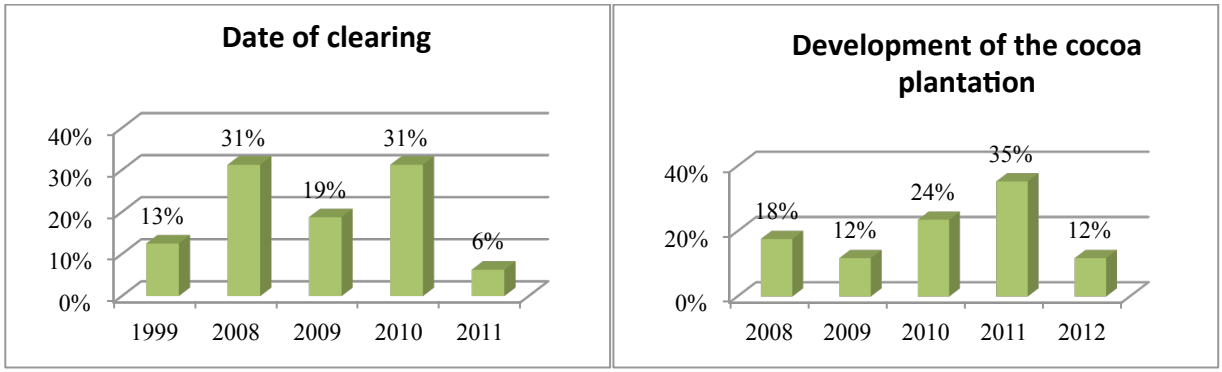


Figure 3: Dates of land clearing and development of cocoa fields in the Mambasa region.

Land is still relatively cheap and readily available in the Mambasa region (about $50 per hectare, and less if a large area is purchased). This is contrary to the situation in the "*Grand Nord*", the region south of Butembo, where refugees that fled the Goma area resettled.

There are two types of migrants that are coming to the region. The first group are internally displaced, who leave the Butembo–Lubero area in search of land and a better living. The second group are wealthy businessmen, mainly from Butembo, who are attracted by the prospect of cheap land and production of food crops for the increasing population. The indigenous population in the Mambasa region are forest people that are engaged in hunting, collection and trade, and not really in agricultural activities.

Photo 1: Rice field in Komanda developed by migrant from Butembo. Photo: H de Beule

Local chiefs will sell any amount of land to any buyer. If the land is not being used, the chief will sell it again regardless of the first contract. As a result of this practice, farmers or businessmen will clear all the land they obtain to avoid losing it to another buyer.

Buyers

The main buyer in the Mambasa region is Esco Kivu. There are also a few middlemen, but they represent little competition. Esco has actively promoted cocoa growing; they distributed planting material to the farmers, have extension staff in the field, and operate permanent stores.

Other organisations

Wildlife Conservation Society (WCS) has been active in the Mambasa region and has adopted the idea of cocoa growing as a tool in forest conservation. They started promoting the use of cocoa under controlled forest cover in 2009. They received financing from the International Fertilizer Development Center (IFDC) to develop 1,250 ha of forest-cover cocoa within the context of the national REDD program. Corneille E.N. Ewango, the current head of the REDD program at WCS, provided details about the project.

The WCS REDD program has four cocoa nurseries and limited field staff. Government extension workers are responsible for carrying out training on cocoa growing and forest conservation, and farmers are advised to cut undergrowth in the forest rather than cutting everything down. In practice, there is limited involvement by the government extension workers, and farmers rely strongly on the assistance of the Esco extension workers for know-how and training. Most of the farmers prefer to cut down everything and plant cocoa and food crops instead of just cocoa. WCS seems to accept this practice as long as the farmers replant sufficient shade trees.

Photo 2: Cocoa nursery develop by WCS in the REDD project. Photo: H de Beule

3.2.3 Drivers of deforestation

Migration from the Butembo and Lubero region causes considerable deforestation. Migrants acquire land from the local chiefs and plant short-cycle rice, long-cycle rice and maize, in that order, on new fields opened in the forest. The farmers will only plant cocoa after two to three years, when the soil fertility begins to reduce.

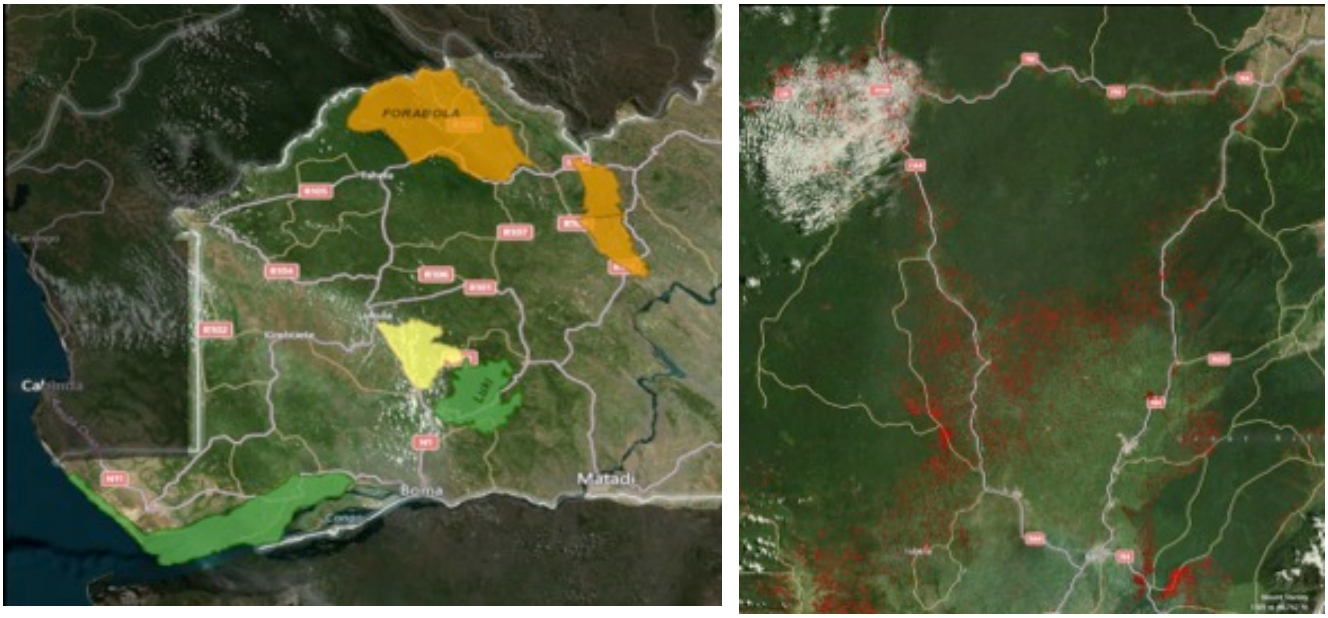
Another cause of deforestation, probably even more important than migration, is illegal logging and the production of charcoal, which takes place along the N4 between Komanda and Mambasa. There is only one official logging concession in the region, located along the N4. Regardless of that, stored planks and trucks loading planks or charcoals can be seen all along the N4.

It is clear that there is also a lot of deforestation around and in the forest concession of ENRA. Mr Ducarme, the managing director of ENRA, stated that ENRA experienced many problems with the population surrounding the concession. As soon as ENRA creates a road into the forest to source their wood, the population follows and clears fields for agricultural use inside the concession. One bloc of the concession has already been cancelled, as the population density inside that area had become too high. Furthermore, he complained about the theft of wood and the piracy of truckloads of wood with the knowledge and/or involvement of the authorities.

Photo 3: Process of loading charcoal and planks along Mambasa-Komanda road (N4). Photos: H de Beule

3.3 Bas Congo

3.3.1 History of cocoa in Bas Congo



Map 9: Area in Bas Congo north of Tshela where cocoa is grown (yellow) and forest loss since 2000. Source: www.wri.org

Bas Congo and Equatorial Province were known as strongholds of cocoa during the colonial era. At the time of independence, agri-businesses produced 5,200 MTs in these two provinces. Unilever accounted for 45% of the total production, and five other big plantations produced the remaining 40%. Village production (5-10%) developed around these agribusinesses, as the businesses offered planting shoots and

outlets to village growers. The main region for cocoa growing in Bas Congo is the area of Nganda Sundi, north of Tshela, bordered by the enclave of Kabinda, Angola.

During the colonial era and in the first decades thereafter, the *Société de Cultures et d'Industries Agricoles au Mayumbe* (SCAM) owned the most important plantation in Bas Congo. They have now shifted from cocoa plantation to rubber. SCAM still has 1,081 ha of sharecropping in cocoa, and they buy the crop of the independent farmers, but the sandy-loam soil in the region is exhausted. Thus, most of the cocoa smallholder plantations left in the region are in need of rejuvenation or at least soil fertility improvement.

3.3.2 Actors

Farmers

After comparing the information from different buyers, the authors calculate that there are 3,000-4,000 farmers in Bas Congo. The authors interviewed fifteen farmers in the Nganda Sundi region. The average age of the farmers interviewed is 56 years, higher than in Oriental Province. The average size of cocoa plantation is 1.9 hectares. . All fields were cleared before 2000 and more than half (61%) were cleared before 1980. About one third (35%) of the fields cleared were under primary forest cover.

Slightly more than one-third (38%) of the fields were developed before 1990, and 17% were developed in the nineties. The remaining half (46%) were developed since 2000.

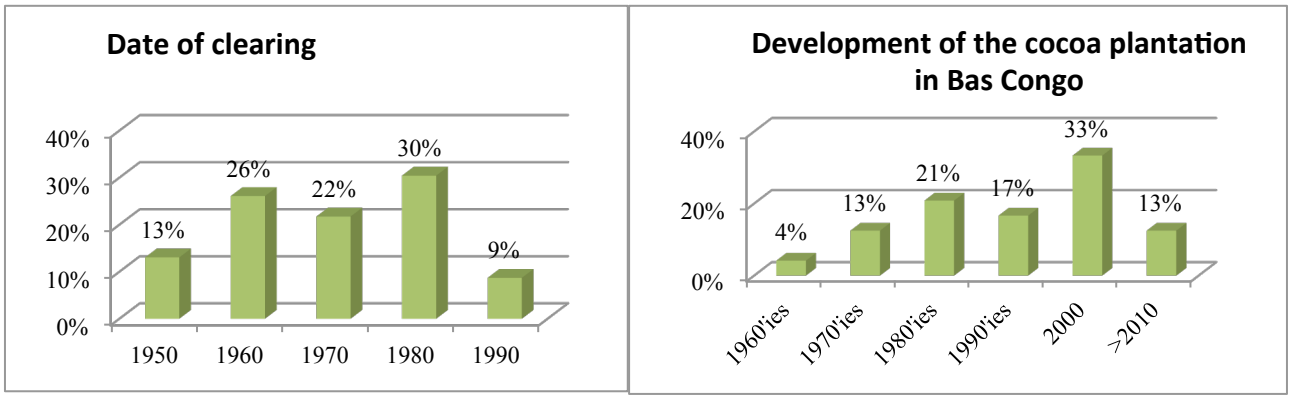


Figure 4: Date of clearing and development of cocoa fields in Bas Congo

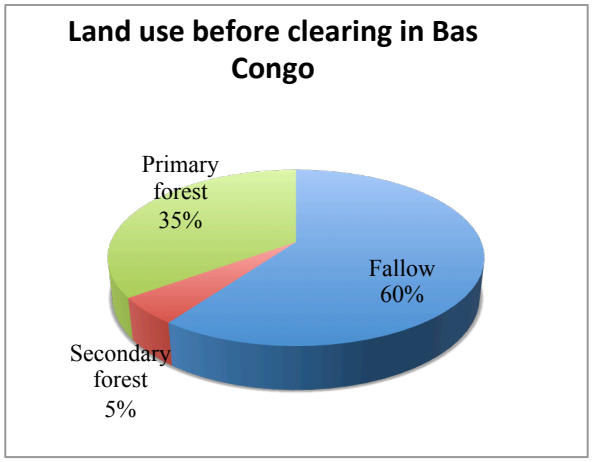


Figure 5: Land use before clearing in Bas Congo

Both the fields and farmers are old. Farmers are considering rejuvenation of the fields, but few have the courage to cut the current cocoa trees down. Some new fields that are currently being developed are on agricultural land, but these are few.

Buyers

SCAM is part of the Group Blattner Elwyn and is the most important buyer in the region. SCAM is made up of three factories. One factory complex processes cocoa and coffee at Nganda Tsundi, another processes granulated rubber at Tshela, and the third produces palm kernel oil (PKO) and animal feed (PKE), a by-product from the shell and husk of the palm kernel, at Boma.

Photo 4: Development of SCAM rubber plantation in Nganda Sundi. Photo: H de Beule

SCAM was developing the rubber plantation during the field visit. Old cocoa plantations (> 30 years) had been cleared and are currently being replanted with rubber trees (*Hevea Braziliensis*). SCAM also has a social program focusing on healthcare and education of the farmers and their families.

COCOMA is a cooperative that serves as the apex body for eight associations. It attempts to offer training to its members on both cocoa agronomy and organisational capacity building. They have been exporting smaller volumes of cocoa (about 200 MT for 2012) since 2009. COCAMA is considering Fair Trade certification.

BTC Export: Blaise Tamukui, a Congolese businessman who studied in the Netherlands, established BTC Export in 2010. He has up a network that allows him to buy and export 100-200 MT of cocoa from Bas Congo per year. The company does not pursue any social or environmental certification.

PC Mayombe and others: There are other buyers and middlemen active in region, including PC Mayombe, but little information is available regarding them.

Other organisations

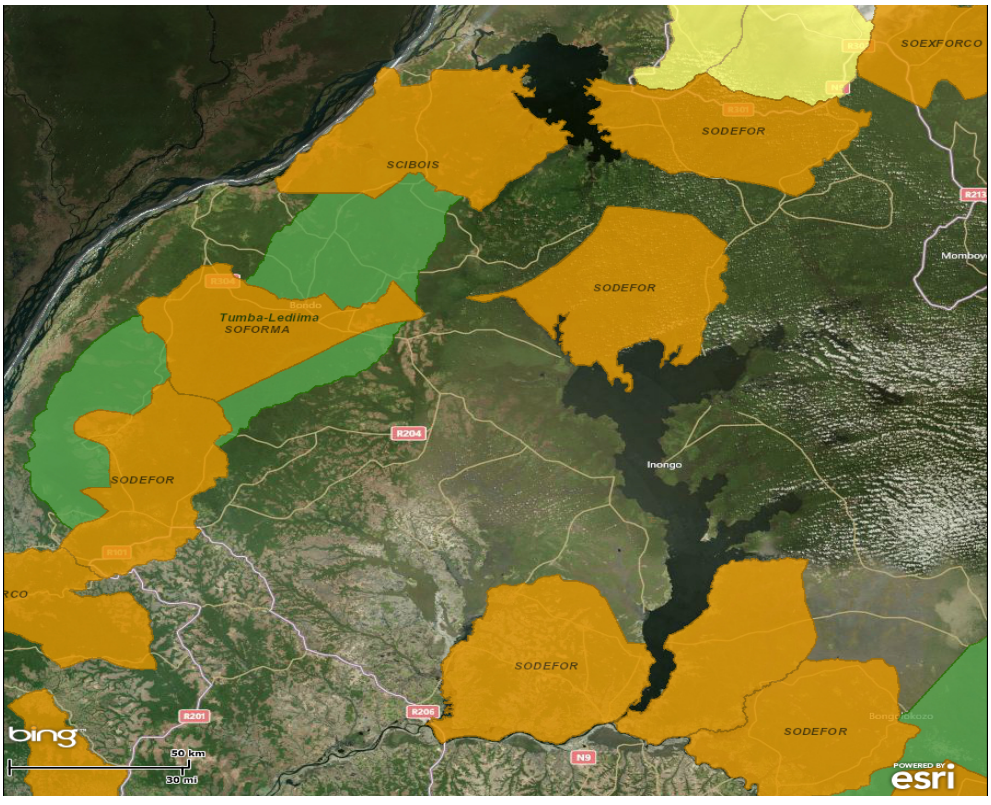
INERA: There are three stations of the Congolese agricultural research institute INERA in Bas Congo. The INERE station near the Luki Natural Reserve used to carry out research on cocoa and produced planting material, but stopped years ago.

3.3.3 Drivers of deforestation

Expansion of the cocoa growing area appears to be limited and is mainly on agricultural land. Very few signs of deforestation were witnessed in the region, and the same becomes visible from area maps, where the red dots indicate almost invisible amounts of deforestation.

Map 10: Red dots indicate deforestation in Bas Congo since 2000. Source www.wri.org

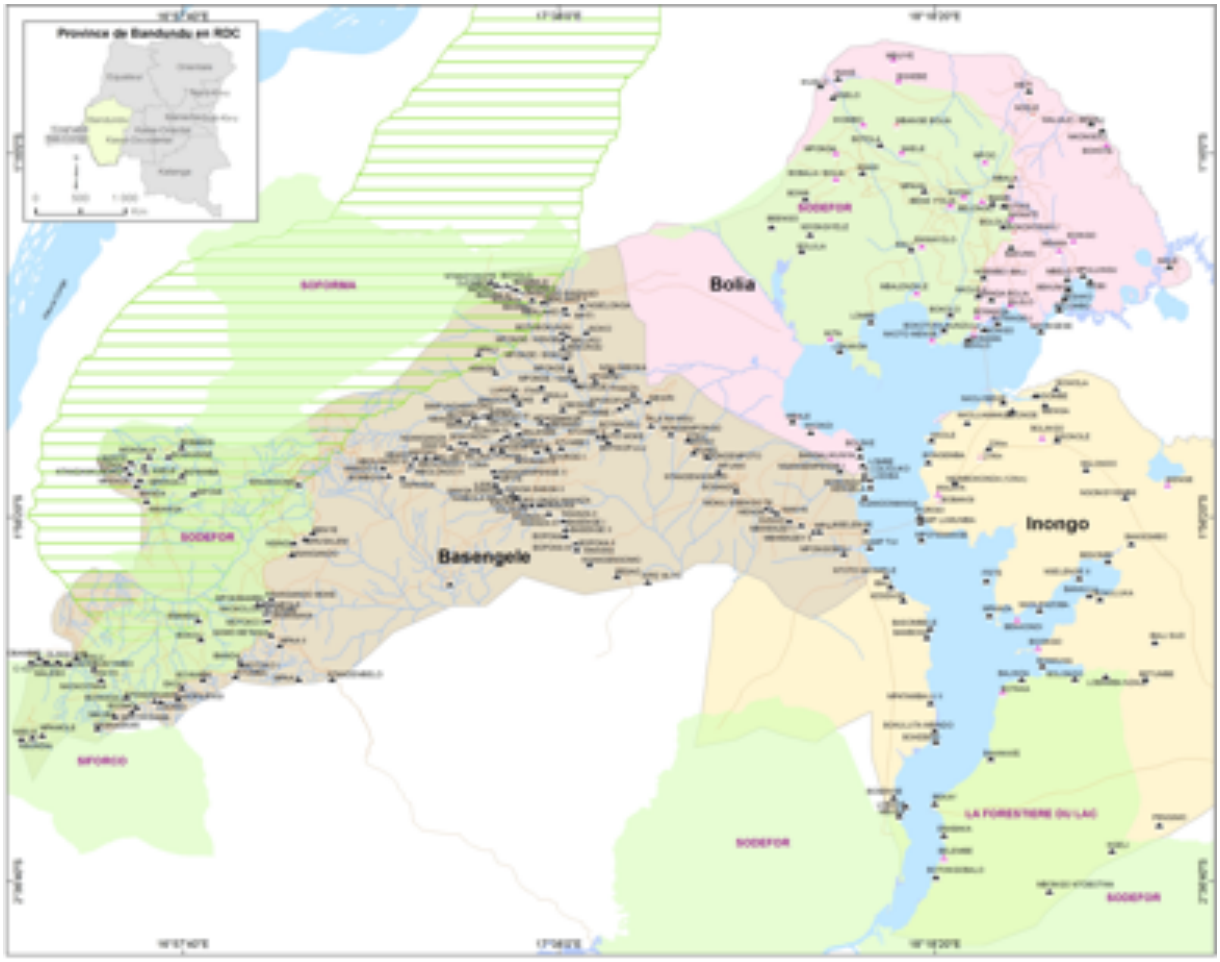
3.4 Bandundu Province



Map 11: Bandundu Province forest concessions, national parks, and cocoa (yellow). Source: www.wri.org

3.4.1 History of cocoa in Bandundu

Cocoa is grown in the north of Bandundu Province, particularly in the region surrounding Lake Maï Ndombe. Cocoa can be found in the area surrounding and south of Inongo town, in the Basengele region on the west of the lake, and in the Bolia region in the north between Isongo and Weti.



Map 12: Cocoa-growing areas around Lake Mai Ndombe.

In the north, cocoa growing continues in Equatorial Province towards Bikoro on the shores of Lake Tumba and in the region between Bikoro and Mbandaka. Cocoa is also grown in the Lukolela region in Equatorial Province, but it was not clear if the road in Basengele was able connect to Lukolela.

Cocoa in this region was introduced in the 1980s from nearby cocoa areas in Equatorial Province. A dense humid lowland forest covers the region. The main roads are reasonably well maintained by the logging companies, but the feeder roads are poor. The use of a boat in this region is mandatory, which makes the development of a centralised extension service for cocoa farmers rather challenging and expensive. Transport of goods happens via the Fimi and Kasai Rivers, which empty into the Congo.

3.4.2 Actors

Farmers

Only seven farmers situated close to the road or the village were interviewed in this region due to the lack of infrastructure and the challenging travel conditions at the start of the rainy season. Farmers and their

associations reported that new cocoa fields are not being developed. All plantations around the lake were quite similar in age and maintenance.

The average age of farmers interviewed was sixty-two years, but one or two of each of the farmer's sons aided in maintaining their fields. Farmers have on average 3 ha of cocoa, but only a quarter-to-half hectare is maintained. Most of the cocoa fields were cleared in the early 1980s and developed by the mid-1980s. Because the fields visited were nearby the road and village, all fields had been developed on fallow land.

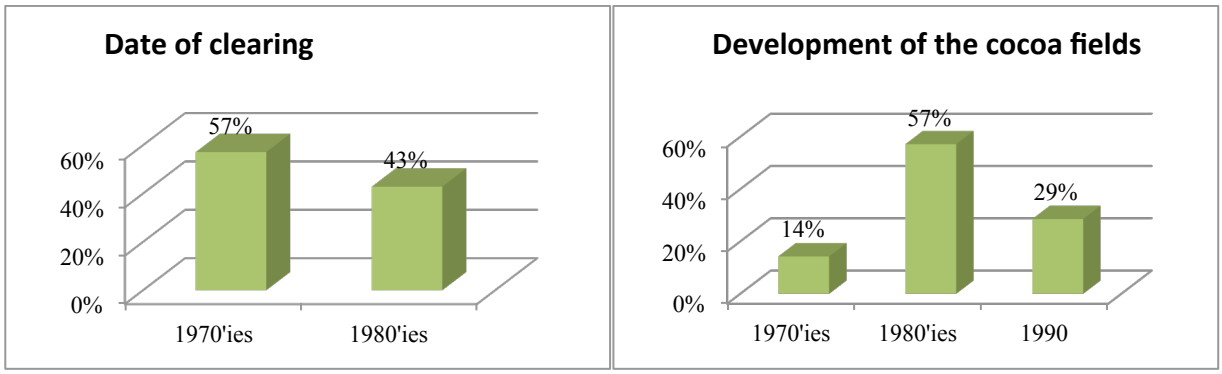


Figure 6: Decade when land cleared and cocoa developed around Lake Mai Ndombe.

Farmers have to pay 5,000CF (920CF=$1) per year as tax for the ownership of a cocoa field. Fresh cocoa beans are bought at a price of 150CF per kilo, and dried at 300-500CF. They harvest on average 860 kilos of fresh cocoa beans per hectare, the equivalent of 344 kilos of processed cocoa, for an annual income of $140 per hectare.

Additionally, farmers grow an average of 2 ha of food crops. Fields for food are cleared in the surrounding forest using a slash and burn system. They remain in use for three to four years, after which the farmer will move on and look for a new field. Per hectare of mixed maize and cassava, farmers will harvest:

- Maize: 20 bags at 25,000FC ($27) per bag or a total of $540 per year
- Cassava: 17 bags at 20,000FC ($22) per bag or a total of $347 per year

Such calculations show why farmers are not maintaining or expanding cocoa fields.

Buyers

Cooperative movement: There are three cooperatives based in the three cocoa-producing zones around the lake: COOINDELO in Isongo, COOPEBAS in the Selenge region, and UPINO in the region surrounding Inongo. The cooperatives have respectively 11, 4 and 4 associations that are dedicated to cocoa. They were created in 2010-2011 with the support of the Belgian NGO Trias, and they do not yet have their own export licences. In the meantime they have been exporting through COOCAMA and exported 15 MTs in 2011, 80 MTs in 2012 and 34 MTs in 2013. The cooperatives, contrary to their farmers, make profits on cocoa exports, regardless of the various formal and informal taxes encountered during export.

BTC Export has no sales representative present in the region but they do scout for cocoa in the region, mainly in the Inongo area, as they are active in the neighbouring Equatorial Province. It is not clear what tonnage they source in the region.

Other individuals buying cocoa, coming from the Congo, Cameroon or even Chad. The assumption is made that the overall quantity bought by these middleman is rather low, perhaps totalling 100-200 tons.

Other organisations

The Ecosystem Restoration Association Inc.:
A Canadian company, which has started a REDD project in the Basengele region on the territory of an old wood concession of SODEFOR. The main activities of this project will be the development of fuel wood plantations, training of the local population and the promotion of agro-forestry. They had however never heard about the use of cocoa in an agro-forestry setting.

3.4.3 Drivers of deforestation

Currently, the price of cocoa at the farm gate does not promote the development of new fields, and therefore cocoa cannot be considered as a cause of deforestation. The main drivers of deforestation surrounding Lake Maï Ndombe are wood logging and food production.

Wood logging was not witnessed in the region, as the time spent was limited. However, several boats transporting wood were observed while travelling on the River Fimi between Nioki and Inongo. Sylvain Kabongo, Coordinator of Trias in the Maï Ndombe region, stated that the impact of wood logging in the region was devastating.

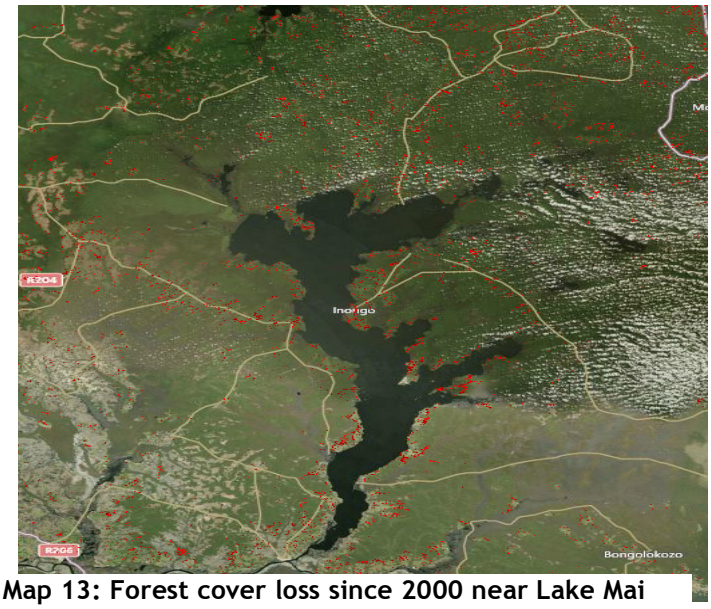
Quite often wood logging and food production go hand in hand when it comes to deforestation.

Logging companies create roads to get to where they want. Ones the logging is done, farmers use the same roads to access new areas in the forest. For the farmer, the destruction caused by logging means less work in clearing the field.

Lots of new maize and cassava fields can be observed when travelling along the roads around the lake. In the Basengele region, the researcher noticed that population growth forced the villages to expand into the surrounding forest. Additionally, neighbouring forest is being degraded or even destroyed in the continuous search for firewood.

Photo 5: Wood transport on the Fimi River, Bandundu Province. Photo: H de Beule

Photo 6: New cassava and maize filed along the Inongo-Mbala Road. Photo: H de Beule.



Map 13: Forest cover loss since 2000 near Lake Mai Ndombe. Source: www.wri.org

3.5 Equatorial Province

The researchers did not visit Equatorial Province; however, it is known that cocoa is grown in the areas south and east of Mbandaka, and further north in the areas south and east of Gemena. Plantations in these regions are old and some of them even date back to the colonial era. Rejuvenation of the fields is needed and farmers closer to the bigger trading centres are interested in doing so. Prices are considerably higher (700-800CF) in the bigger trading centres due to the presence of traders from neighbouring countries, mainly Cameroon.

4. Congolese government and partners

Ministry of Agriculture

The Government participated in a meeting in Abidjan in November 2012 regarding the revival of the cocoa sector, where each participating country agreed to develop an action plan for the cocoa network "*Filière cacao*." The Congolese Government decided to co-finance the reinstatement of cocoa growing in Bengamisa, as it had already been agreed to give prioritize coffee.

Romain Kyalire, an advisor to the Minister of Agriculture, his excellence Vahamwithi Chrysostome, said the government is aware that there were Congolese, Gabonese and Cameroonian cocoa buyers who were buying cocoa illegally in Equator Province and Bas Congo. Reports on farmer extension would have been received at the ministry if these actors worked in a legal context. The problem in the West is that the buyers refuse to collaborate with the ONC. The Ministry of Agriculture regrets this and hopes to be able to identify responsible buyers, such as Esco Kivu in the East, a company that offers extension services for its farmers.

Ministry of Environment

The secretary general of the Ministry requested that we send out an introduction letter, accompanied by the report of this research and our questions, and assured us that he would communicate with us in due time.

Organisme National de Café (ONC)

The researchers visited the ONC offices in Limetè, learning that the ONC has difficulties in getting information on the quantity of cocoa exported via the West of the country, namely Boma and Matadi. He advised us to get in touch with the ONC in the East of the Country, as they are collecting data.

5 Future prospects

An estimate of the total acreage of cocoa currently grown and the future prospects has been developed in the table that follows. Given the size of the country, lack of infrastructure, and the limits of the study, this is a very rough calculation meant to serve as a guideline to explore possible scenarios.

Table 2: Current and expected cocoa production

Region	Production (MT) or Farmers (F)		Total average ha in region		Expansion factor	Expected expansion in next decade (ha)		Major Bottlenecks, Assumptions, Comments
	Min	Max	Min	Max		Min	Max	
Mambasa area	5000F	7000F	4500	7,000	**150%**	6,750	18,000	Security in all areas stabilizes and allows farmers to work their fields. More than 50% of the cocoa fields in the Mambasa area are not in production.
Average area per farmer	.75 ha	2ha						
Beni area	10,000F	12,000F	5,500	11,000	75%	4,125	8,250	Security in all areas stabilizes and allows farmers to work their fields.
Average area per farmer	.5 ha	1ha						
Bas Congo, area North of Tshela	1,000 MT	1,500 MT	2,500	5,000	10%	250	500	It is very unlikely that new cocoa fields will be developed in the near future.
Avg production of dried cocoa beans per ha	0.25 MT	0.5 MT						
Equatorial Province: Lake Mai Ndombe, Mbandaka, Lukolela, Befale, Gemena	5,000 MT	7,000 MT	12,000	24,000	50%	6,000	12,000	20% of the production crosses the border into Congo Brazzaville and Cameroon. Infrastructure and price improve considerably in remote areas such as Mai Ndombe, Befale and Gemena. Many old fields can be rejuvenated.
Avg production of dried cocoa beans per ha	0.25 MT	0.5MT						
Oriental Province: Surrounding Kisangani	300MT	500MT	500	800	100%	500	800	Some of the Bengamisa plantation has been restored and some farmers grow cocoa. The Kisangani region has great potential to grow cocoa. Infrastructure needs to improve considerably.
Total						**17,625**	**39,550**	

Cocoa could in the coming decade be responsible for the loss of 17,625 to 39,550 hectares of forest, which is equivalent to 59-129 square miles.

The greatest potential for deforestation caused by cocoa (min 26 square miles; max 69 square miles) is in Oriental Province in the areas surrounding Mambasa along the N4 and the ENRA concession. The road network in that region is quite good, WCS is still distributing planting material, and there is a buyer that offers good prices and extension services. Additionally, a continuous influx of migrants from the Butembo–Lubero region are looking for food and cash income.

The second most important region will be the wider area surrounding Mbandaka and Lukolela in Equatorial Province, with an estimated minimum of 23 and a maximum of 46 square miles of forest that will be lost in the coming decade to cocoa production. Cocoa is transported via the Congo River towards the port in Boma. The vicinity of Cameroon increases competition and price, making it attractive for farmers to restore old fields and to develop new ones. The expansion rate for the whole region is estimated at 50% due to several reasons:

- Many areas have numerous abandoned old fields that can be restored or rejuvenated.
- Some areas are just too remote and difficult to source the cocoa.
- Some areas lack buyers that are willing and able to buy at a fair price.
- Some areas lack the workforce or have a population that is more interested in hunting and gathering than cultivating cash crops.

Cocoa is already well established in the region surrounding Beni. The number of cocoa plantations will still increase, but at a lesser speed than in the Mambasa region. Minimum forest loss due to cocoa growing is estimated at 16 square miles, and maximum loss at 32 square miles. Production of food crops is quite important considering the population density, and many of the new cocoa fields are being developed on old agricultural fields. The main risk areas are in the northwest of the Ruwenzori plain, the areas along the N4 and the Watalinga–Nobili area bordering the Virunga National Park. This is assuming that rebel activity subsides in both areas along the Virunga National Park.

There are currently only middlemen operating in the area around Kisangani, and cocoa is unexpected to grow due to transportation challenges. Cocoa is transported via the road to Beni where it is sold travels approximately 800 km, of which only 70 km are tarmac. The second transport option is via the Congo River, but this is unlikely to be cheaper or easier.

Little expansion of cocoa growing is expected in Bas Congo. The few new fields that are being developed are on agricultural land.

Annex 1: Etude de déforestation

1) Date :		2) Village:
3) Nom producteur :	4) Age:	5) Position de l'interviewé : □a) patron □b) gérant
6) Vivent en famille ? □a) oui □b) non		7) Nombre d'enfants ?

8) Culture vivrière le plus important? a)□ Manioc b)□ Haricot c)□ banane d)□ Riz e)□ Légume h) □ autre…

9) Culture de rente? a)□ cacao b)□ café c)□ latex de papaye d)□ Riz e)□ palmier a huile f) □ bois g) □ autre…….

Production de cacao

10)	Autre culture dans la parcelle ? (b=banane, p=palmier, cf=café, m=manioc, r=riz, py=papaye h=haricot, ms=mais)	
11)	Superficie total (ha) et No de pieds de cacao	…….ha……
12)	Défrichée il y a combien d'années ? (avant 1990)	
13)	Quoi au paravent ? Jachéré herbes(J) Jachère arbuste (A) forêts (F)	
14)	Cacao planter en quelle année ?	
15)	Déjà productif ? (o/n)	
16)	Utilisation d'arbre d'ombrage (Oui/Non)	
17)	Utilisation de technique de fertilisation du sol ? Les quelles ?	
18)	Entretien de la plantation ?	
19)	Cacao récolter grand saison 2012 et 2013 (Estimation)?	12 : ……kg 13……..kg.
20)	Comment récolte ? Fréquence ? Outils utiliser ?	
21)	Comment Fermenter ? (Ou ? Fréquence ? Combien de jours ? Par qui ? Quantité fermenté)	
22)	Comment sécher et stocker ?	
23)	Nombre d'acheteur dans la région ?	
24)	Différence de prix selon la qualité	

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