

Land-use change and its influence on rural livelihoods, food security and biodiversity conservation in the Southwest Region of Cameroon

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Summary

This scoping study aims to give a preliminary overview of historical land uses, the underlying drivers of land-use change and the impacts on rural communities in the Nguti area of Southwest Cameroon. The information presented in this report was gathered through a literature review, collection of secondary data and scoping field visits. A reconnaissance survey, community meetings and participatory rural appraisals were undertaken in three focal villages in the Nguti district.

This area has experienced a number of changes in land use over the last 100 years and is currently experiencing a new wave of change in the form of large-scale agro-industrial oil palm development. Until recently, the land use has been small-scale household swidden agriculture with traditional shifting cultivation and fallowing, secondary forest of different stages, food crop farmlands, and cocoa agroforestry.

3.1 Introduction

Cameroon is located in West Africa and shares borders with Nigeria, Chad, Equatorial Guinea, Gabon, Central African Republic and Republic of Congo (Figure 3.1). It has a mix in vegetation ranging from the tropical rainforests typical of the Congo Basin

countries, to the savanna/Sahel grasslands typical of West African countries such as Burkina Faso. Cameroon offers a rare diversity of ecosystems, mountains, littoral and marine coastlines, and has a great diversity of people and cultures. The total land area of Cameroon is about 47 million ha and some type of forest (including both dense and mixed forests) covers 59% of the land (WRI, 2013). The overall land-use figures in Cameroon are classified as: forest area (19.48 million ha), arable land (6.2 million ha), permanent crops (1400 million ha), others including permanent meadows and pasture land (20.04 million ha) (FAO 2013).

Between 2000 and 2005, the rate of forest change in Cameroon was estimated at 9.9% per annum. This was primarily due to timber exploitation (legal and illegal) and land clearing for agricultural activities and mining (WRI 2013).

Cameroon has an estimated population of about 20 million (UN 2014). It is estimated that about 85% of the population are employed in the agricultural sector and the majority of people live in rural areas where there is a significantly higher rate of population increase. The economic crisis that hit Cameroon in the late 1980s and 1990s left many young people jobless, with no option but to settle on farming as a means of fighting poverty, (personal communication from S Abia, 2013). In the early 2000s, an increase in cocoa prices gave farmers a strong motivation for expansion of their income from cocoa. These factors greatly contributed to the expansion of the agricultural sector and simultaneously increased forest degradation and deforestation. Cameroon has also become the breadbasket of its neighbors, especially Gabon and Equatorial Guinea, which have a high demand for Cameroonian food crops such as cassava, cocoyams, plantains and banana. According to Sneyd (2014), the cross-border trade in Cameroonian banana, manioc and plantains engaged in by Gabonese and other “*buyam-sellam*” traders is seen by many to be an additional source of price pressure on traditional staples. This cross-border trade seems to be on the rise (Sneyd 2013). These lucrative external markets have encouraged high levels of food crop cultivation in all regions of the country.

The establishment of large-scale agro-industrial palm oil plantations has recently taken place in Cameroon as a result of the government’s quest to become an emerging economy by 2035 (MINEPAT 2009). The Southwest Region of Cameroon in particular has undergone significant changes in land-use patterns and practices, from primary forest, foraging for NTFPs, and swidden agricultural practices for coffee (*Coffea arabica* and *C. robusta*) and cocoa (*Theobroma cacao*) to timber exploitation and more recently, establishment of agro-industrial plantations. The fertile soils, available land and high prices of cocoa have greatly contributed to the changes in land-use patterns by local farmers. It is now becoming increasingly common for farmers to alter their agricultural practices and begin growing oil palm (*Elaeis guineensis*). Planting a few stands of oil palm on the farm has been a common practice on farms to provide palm oil and palm wine for domestic consumption.

During the last 7 years however, farmers have begun to establish oil palm plantations on a medium scale, producing palm oil for the local Cameroonian market. In addition to the smallholder oil palm farmers, two main agro-industries have been operating within the region for almost 100 years: CDC (Cameroon Development

Corporation) and PAMOL. There is now a new multinational palm oil company in the southwest area of Cameroon; SG-SOC (Site Global Sustainable Oils Cameroon Ltd.) in partnership with Herakles Farm, a US company. Their initial negotiation with the government gave them access to about 70,000 ha of land, which covered two divisions of the Southwest Region. While there is no question that oil palm is a highly lucrative crop that can contribute to economic development, the conversion of native forests for plantations places a heavy toll on the environment (Hance and Butler 2011). These plantations bring ecological, sociocultural, economic and demographic changes as well as other related issues linked to human settlement and livelihoods.

3.2 Background

The purpose of this scoping study is to provide background information on a selected study area (Nguti) in the Southwest Region of Cameroon in order to understand the processes and impacts related to land-use change in the region. Research was focused on four main areas of interest, each following specific objectives:

1. Description of the study area
 - What is the geographical, social, cultural, political, economic and ecological context of the study area?
2. Land use: Changes, drivers and impacts
 - What are the current types of land use in the landscape?
 - What are the local and external historical events/drivers that have influenced land cover, land use and land management in the study area?
3. Interventions affecting land use in the study area
 - What interventions have influenced land use/land cover in the landscape?
 - What are the motivations/expected outcomes of the intervention in terms of participation, food security, livelihoods and biodiversity in the landscape?
4. Livelihoods, food security and nutrition
 - What is the current livelihood, food security and nutrition situation in the study area?

3.3 Research methods

Information presented in this report is based on:

- secondary data sources and the wider literature, which was consulted to gather background information on the Southwest Region of Cameroon and the Nguti study area
- a scoping field research study carried out in the Nguti-Manyemen region during November/December 2013. A grounded theory approach (Glaser 2013) was implemented in settlements in the study area to gather information on land-use practices, food security issues and livelihoods. A reconnaissance survey, community meetings and participatory rural appraisals (Liswanti and Basuki 2009) were undertaken in three focal villages.

3.3.1 Reconnaissance survey and site selection

The reconnaissance survey involved a 5-day trip to the study area where previously identified villages were visited. During this time, all of the villages within the project area were visited and three focal villages were selected for the purpose of the scoping study: Ayong, Babensi I and Babensi II (Figure 3.2). These villages were selected based on their easy accessibility compared to others in the study area. GPS coordinates were taken for each village.



Figure 3.2 Map of villages in Nguti study area, Southwest Region, Cameroon.

Source: Map produced by E Kuchambi, Independent GIS Expert, October 2014

3.3.2 Methods undertaken in each village

Initial community meetings

In each of the three villages, a meeting was held with the chief, council and other elders of the village to introduce the research team to them. A subsequent meeting was held with the entire community to provide a detailed explanation of the research objectives and program.

Administration of structured questionnaires

Structured questionnaires were administered to a sample of the households. The number of households interviewed in each village is shown in Table 3.1.

Table 3.1 Number and percentage of interviewed households in each village.

Settlement name	Total no. of households	No. of households interviewed	Percentage interviewed (%)
Ayong	111	41	36.9
Babensi I	107	41	38.3
Babensi II	60	41	68.3

Participatory rural appraisal tools

The participatory tools used to gather information in each village included general observations, household mapping and wealth ranking exercises, FGDs, a historical trends exercise, and the pebble distribution method. For the FGDs, historical trends exercise and pebble distribution games, two separate meetings were held in each village: one with men and the other with women. A discussion was also had with the village council members of each community using guiding questions (Appendix 3A).

Household mapping and household wealth ranking exercises

The household mapping and wealth ranking exercises were conducted to establish a list of all households in the settlements and to gather information on the socioeconomic characteristics and wellbeing of the households. These exercises were carried out with key informants from each community. The card game method (Mukherjee 1992) was used for the wealth ranking exercise. Using household lists from the household mapping exercise, cards were prepared to represent each household. Each card had the house number, name, age and gender of one household head. The key informants were guided to independently rank or group the household heads according to their individual perceptions of wealth and wellbeing, alongside the common characteristics of each wealth group.

Focus group discussions

Group discussions and exercises were conducted with the village head and elders on the village's historical and cultural background, land tenure and ownership, collection and sale of forest products, and the regulations and taboos concerning land and forest use.

Habitat type and forest use scoring exercises

Scoring exercises were undertaken to assess the relative importance of different land-use types and practices in the landscape. These took place during FGDs with men and women separately. The pebble distribution method (Liswanti and Basuki 2009) was used such that the groups distributed 20 pebbles, beans, maize or other small objects over illustrations of land and forest types (Appendix 3B and 3C) according to their perceived relative importance. Explanations were asked for each choice.

Historical trends exercise

Working with the two groups (men and women) separately, the villagers from a number of different households took part in an historical trends exercise to determine events that took



Scoring exercise on primary forest use using the pebble distribution method. (Stella Asaha/Forests, Resources and People, FOREP)



Historical trends exercises with women and men. (Stella Asaha/FOREP)

place in the study area over the past 30 years. They were encouraged to brainstorm and discuss parameters or specific events and how they had evolved over time. The parameters included social, economic, infrastructure, health, cultural, administrative and other issues that had been noticed to change. A template of the historical trends exercise and parameters used for discussion is shown in Appendix 3D.

3.4 Scoping study results

3.4.1 Study area description

Geographical context

Cameroon's Southwest Region is bounded to the north by the Northwest Region, to the east by the Littoral and West Regions and to the west by Nigeria. It is made up of six divisions: Fako, Meme, Manyu, Ndian Kupe Muanenguba and Lebialem. The regional capital, Buea, is situated at an altitude of 1000 masl on the southern flank

of Mount Cameroon. The natural vegetation of most of the Southwest Region is dense, humid, evergreen forest characterized as Atlantic Biafran forest rich in *Caesalpinaceae*. Extensive areas of this forest formation have been lost through agricultural expansion. Agriculture based on shifting cultivation practices is the main cause of forest loss in Cameroon (Robiglio *et al.* 2010). Mangroves characterize the coasts of the region, although these are being increasingly denuded through felling for fuelwood and invasion by the exotic swamp palm *Nypa fruticans* (Sunderland and Morakinyo 2002). An extensive mountain chain runs along the Cameroon–Nigeria border through to the Bamenda Highlands to the Adamawa Plateau in the northern savanna grasslands, where vegetation and habitat range from high-altitude and submontane forest, to savanna and alpine grassland on the highest peak, Mount Cameroon (4095 masl) (Sunderland-Groves *et al.* 2003). Relatively fertile volcanic soils predominate around Mount Cameroon (Watts 1994).

The region experiences high rainfall, varying from 1500 to more than 10,000 mm per annum at Debundscha, at the foot of Mount Cameroon; this is classified globally as the second wettest place in the world after Chiranjung, India (Njohjam 2000). The climate is characterized by clearly recognized wet and dry seasons. Most rain falls during the months of March–September while the rest of the year remains fairly dry (McSweeney *et al.* 2010). However in the past 4–5 years seasonal patterns have changed resulting in increasingly rainy months from March through to November or even early December, and very short, dry seasons from December to February. The recent change in rainfall patterns has been favorable to some farmers who acknowledge that it enables them to have year-round cultivation of some food crops such as maize and vegetables. The temperature ranges from 24°C to 26.5°C (MINEF 1997) with high humidity throughout the year.

Ecological context

The region is rich in biodiversity and comprises of eight official protected areas, some of which are important biological ‘hot spots’ and heritage sites of global importance (e.g. the Mount Cameroon and Korup forests). These areas have attracted much interest from conservation initiatives nationally and internationally to ensure that the forests are conserved for the benefit of both humans and wildlife. In the Korup and Obang forest areas, for example, about 1050 species of butterflies have been recorded, which is the highest recorded number in Africa so far (MINEF 1997). Most of the forested area of the region has been classified into different forest-use types. These were grouped together to form technical operations units (TOUs) comprising of forest management units as well as permanent and non-permanent forests (WRI 2013). There are three TOUs in the region: Korup-Ndongere TOU, Takamanda-Mone TOU and Mount Cameroon TOU. Between 2007 and 2009, 10 national parks and wildlife sanctuaries were created in Cameroon with five of these in the Southwest Region alone; these include: Takamanda, Kagwene, Ndongere, Mount Cameroon and Mount Bakossi.

The biodiversity of the Nguti-Mundemba forest area consists of 403 vascular plant species belonging to 272 genera and 81 families. The most common plant families include: Fabaceae, Rubiaceae, Euphorbiaceae, Apocynaceae, Malvaceae, (including Tiliaceae, Sterculiaceae and Bombacaceae), Annonaceae, Meliaceae, Moraceae and



Children selling smoked porcupine. (N van Vliet/CIFOR)

Sapindaceae. Common plant species encountered are: *Massularia acuminata*, *Pycnanthus angolensis*, *Rhektophyllum camerunense*, *Microdesmis puberula*, *Palisota hirsuta*, *Carpolobia lutea*, *Piptadenistrum africanum*, *Rothmania hispida*, *Anthonotha macrophylla*, *Cylicomorpha solmsii*, *Afrostryrax lepidophyllus*, *Amanoa strobilacea*, *Cola buntingii*, *Dicranolepis disticha*, *Dasylepis racemosa* and *Dichapetalum tomentosum* (SG-SOC 2011a). Another report of the area highlights the presence of 19 species of large mammals within 13 families, including forest elephant (*Loxodonta africana*), drill (*Mandrillus leucophaeus*), buffalo (*Syncerus caffer*), deer (*Cephalophus* spp.), porcupine (*Atherurus* spp.), pangolin (*Phataginus* spp.), red colobus (*Ptilocolobus preussi*), chimpanzee (*Pan troglodytes*) and water chevrotain (*Hyemoschus aquaticus*) (SG-SOC 2011b). The common species are hunted and trapped for consumption. The same report also lists a large number of birds, amphibians and reptiles in this forest area.

Economic context

Illegal and legal timber exploitations are a major forest activity in the region, with three official companies exploiting timber in at least five concessions. However, it is unclear how much illegal logging is actually taking place in Cameroon (Cerutti and Tacconi 2006). NTFPs are also an important source of income for forest-dependent communities of the Southwest Region and for the livelihoods of some urban dwellers who are involved in its trade (Tajoacha 2008). The trade in NTFPs is important, particularly across the porous borders with Nigeria and Equatorial Guinea. Many products, although not captured in formal revenue statistics, contribute significantly to livelihoods and an estimated production value of approximately USD 8 million per annum (Abwe et al. 1999). Ndoye et al. (1999) found that value from important NTFPs sold in markets in the humid forest region and border markets of Cameroon amounted to USD 753,000.

Settlement patterns and tenure

Most villagers came from elsewhere to settle in the Southwest Region. After settlement, they set the boundaries with other villages using large streams, the distance to the next village on the trekking track and other landmarks. The borders remain vague and are often the cause of numerous conflicts between the villages, especially between hunters and local timber exploiters. A village closely surrounded by many other villages typically faces more difficulties with land availability than an isolated village; this is one of the reasons why one or two family heads go as far away as possible to settle and start their own small community or village.

Within villages, traditional land tenure and ownership regulations are put in place and are similar in most parts of the region, with slight differences in some places. These differences depend to a large extent on how accessible, exposed or developed the village has become. In a typical forest or remote settlement, most land is obtained and owned by the *indigenes*, or natives, in two ways; by natural means or by inheritance from either parent. An *indigene* is free to get as much forested land as they can, there is unrestricted access, no limits to how much one person can have and no control over what they want to plant. In contrast, a settler to the village does not have direct access to land. They can either buy from individuals within the village or from the village council.

The Government of Cameroon's land laws stipulate that the Government owns all the land in the country. The villagers are recognized as custodians of the land but their rights are limited. People have been unaware of this law in the past, resulting in

Table 3.2 Landownership in the Nguti study area.

Landownership categories	Percentage of households (%)
Self-owned	92.7
Landlord/rented	4.9
Owned by other household member	1.6
Two party ^a	0.8

a If a farmer cannot work on his or her farm, he or she gives the farm out to a laborer and at the end of the season the profit is shared on a 50–50 basis. This is a common arrangement for widows and older men.

Table 3.3 Average number of people per household and estimated population of the three focal villages.

Villages	No. of households identified	Average no. of people per household	Estimated population
Babensi I	111	5.0	555
Babensi II	107	4.3	460
Ayong	60	4.0	240

conflicts when agreements were signed for development activities to take place. Once forested land has been cultivated, ownership stays with the family and is passed on to younger generations. The different types of landownership are shown in Table 3.2.

The total population of the Nguti area is 14,600, distributed among 1435 households (SG-SOC 2011a). The population is made up of people from about nine indigenous ethnic groups and more than 14 non-indigenous groups from other parts of Cameroon and Nigeria. The estimated populations of the three focus villages are shown in Table 3.3.

Access and infrastructure

Most of the villages in the study area are located on the Kumba-Mamfe highway and are fairly accessible year round by car, four-wheel drive vehicle and motorbike. Some of the villages can only be accessed by rocky and muddy roads, which are usually impassable during the peak of the rainy season.

The population of this area has access to two mission hospitals, the St John of God Catholic hospital at Nguti and the Presbyterian hospital at Manyemen. There are also small government health posts in some of the villages that can take care of minor illnesses, emergency cases and delivery of pregnant women. Some of the villages have piped potable water while others still carry water from streams, springs and rivers for drinking, bathing, washing and other household use. The use of chemicals for cocoa pesticides and insecticides are a common practice in the area; this a potential water contaminant, which is a major health concern in the area.

There is generally no access to electricity, even in the accessible settlements, and potable water only in a few homes. Some homes are powered by privately-owned fuel generators that are run only occasionally due to expensive running costs. There is telephone communication networks reception in all the on-road settlements but none in the less accessible settlements. News and information are received through the local Cameroon Radio and Television radio station, local radio stations in Mamfe and foreign stations, especially Akwa Ibom and Cross River FM radio stations. There is also some human movement in and out of villages, which is a common means of transmitting messages, particularly to areas with no mobile telephone networks.

The government's intention to bring education closer to the people with the aim of reducing illiteracy has created primary schools in almost all of the villages, though some are without trained teachers, classrooms, school desks and other basic needs. Secondary schools are now established in every small town or larger village to serve the surrounding population. In the Nguti area, there are government secondary schools in Nguti and Manyemen. This has encouraged education of children, although up to 14% of the adult population has had no formal education, as shown in Table 3.4.

Table 3.4 Education levels of the adult population in the Nguti study area.

Educational level	No. of females	No. of males	Total	Percentage of total (%)
None	33	14	47	14
Primary school	97	87	184	56
Secondary school	40	52	92	28
University	2	3	5	2

Market access and trading

There are not many formal markets in the villages but trading of farm and forest products takes place. Traders from nearby towns go to these villages to purchase high market-value forest products such as bush mango (*Irvingia gabonensis*), *njansang* (*Ricinodendron heudelotii*), bush onion (*Afrotyrax kamerunensis*) and bushmeat, as well as farm products such as cocoa, plantains (*Musa* spp.), bananas (*Musa* spp.) and cocoyams (*Colocasia* spp. and *Xanthosoma* spp.). Some villagers prefer to travel further afield and take their product to local markets to sell it for better prices and to purchase other items for their households at the same time. People also buy household consumables such as sugar, soap and kerosene from small village shops and through home trading. This trading from home is small scale and seasonal, and is influenced by the availability of cocoa. The cocoa harvesting season (September–December) is a period when most people in the village have some money. During this time, both cocoa farm owners and others are engaged in cocoa activities in one way or another via harvesting, splitting, drying or transportation. Much of this money is spent on alcohol. During this season, more people come in from bigger towns to be part of this ‘cash flow.’ Farm laborers, motor-bike riders, traders, tailors and seamstresses, and other business people also come to take advantage of the increased business opportunities.

Scoping study village descriptions

Ayong

Ayong is located about 6 km off the main Kumba–Mamfe road (Figure 3.2). It is accessible by car and motorbikes on earth roads, which are often inaccessible during the rainy season. Ayong is a relatively small settlement made up mainly of cocoa farmers who are settlers from the Northwest Region and some parts of the Southwest Region of Cameroon. These people come from different ethnic backgrounds, but were attracted to this village by the abundance of forested land and their desire for cocoa cultivation. The village has a primary school and the nearest secondary school is at Manyemen, approximately 14 km away. There is no physical marketplace, and farm and forest products are purchased from house to house by traders from the nearby towns. They do not have access to electricity or piped water; they depend on water from streams for drinking, bathing and washing, and use kerosene lamps to light their houses. A few ‘rich’ people in the village own fuel generators, which are usually used only during the high cocoa season when they can afford fuel. Most of the houses are made of wooden planks with iron sheet roofs, although there are some mud houses dotted around the village.

Babensi I and II

These two settlements are located adjacent to each other on the main highway from Kumba to Mamfe. They consist of about 200 and 100 houses respectively, most of which are made of wooden planks and iron sheets. A few houses have thatched roofs and a relatively large number have mud floors. The nearest market is at Wone, located less than 6 km away and situated on the main road. Here, villagers meet directly with traders from nearby villages and settlements and trade their farm and forest products. They also buy household items such as rice, soap, kerosene, clothes, matches, etc., as well as items for school for their children. They do not have access to electricity but use kerosene lamps. They both have primary schools but no secondary school. The population is mainly indigenous with only a few settlers from other parts of Cameroon. They are traditional people with Christian beliefs. The communities in these villages are dependent on farming, focusing mainly on cocoa farms and some other food crops such as plantains and bananas. These villages however are not noted for high production of any particular food crops.

3.4.2 Land use: Changes, underlying drivers and impacts

Current and historical land-use practices

The Nguti study area displays a mosaic of different land-use types including agriculture, human settlements, and protected and unprotected forest areas (Figure 3.3), all of which have undergone changes over the years.

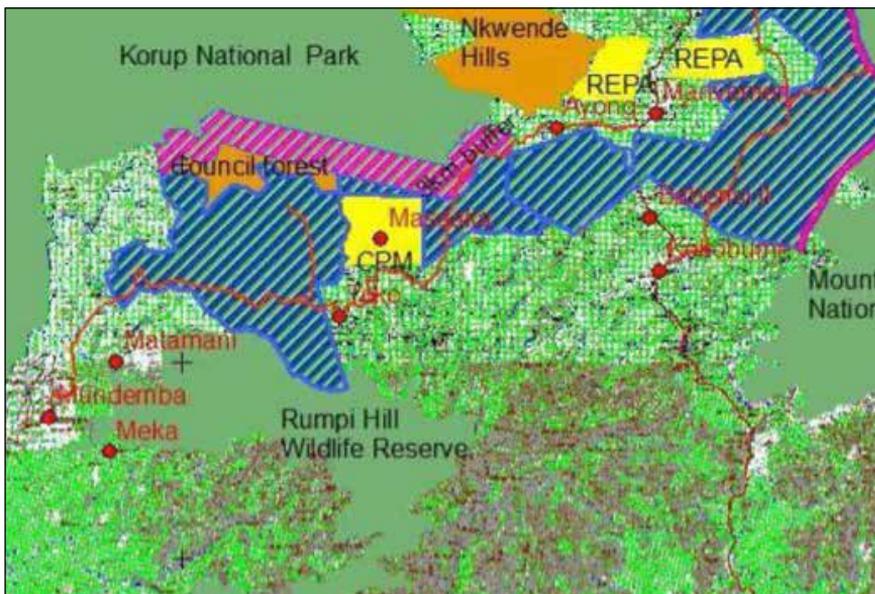


Figure 3.3 Map highlighting different land-use types in Nguti study area.

Note: Blue hashed area = SG-SOC oil palm plantation; red dots = settlements; red lines = roads; orange blocks = council forests; green blocks = national parks/reserves.

Source: SG-SOC (2011a)

Traditional agriculture

Currently, the primary land use is agriculture, consisting of shifting cultivation (slash-and-burn) for primary subsistence purposes, vegetable gardens to supplement subsistence crops (cassava [*Manihot esculenta*], plantains, bananas, cocoyams) and perennial cash crops such as cocoa, coffee and oil palm. Livestock production is poor in the area and domestic animals are raised more for ceremonial occasions and honored guests rather than for household consumption. Over the last 10–12 years, cocoa prices have increased (Figure 3.4), which has resulted in more cocoa farming. This has been a major driver of population increases and in-migration to the area, especially from the Northwest Region of Cameroon and from Nigeria.

Shifting cultivation has been an indigenous farming practice in the study area for many years, where forested land is slashed and burned, cultivated for about 2 years and left to lie fallow for 2–3 years. However, in the last few decades, this has not been the case as jobless young people from cities flood the rural areas and retired people go back to the villages to concentrate on farming. Rich people from the cities also buy large portions of land for food crops and perennial cash crop plantations (personal communication from Chief Ebene, 2013). High demand for food crops from neighboring countries (Weise 2009) and the development of access roads, have instigated these changes. These factors have all increased demand for land, leading to shortages of cultivable lands in most areas and increasing use of degraded lands that have not been left fallow for long enough or at all.

Annual cropping farms are generally found in degraded areas with very little tree cover, and are generally called ‘secondary bush.’ These areas are suitable for annual crops that demand a good amount of sunlight. The crops planted here include maize (*Zea mais*), groundnuts (*Arachis hypogaea*), yams (*Discorea* spp.), cassava, sweet potatoes (*Ipomoea batatas*), cocoyams, egusi (*Cucumeropsis mannii*) and some common vegetables. Most of the food crops are harvested within 3–7 months of planting. Cassava is usually left and harvested a year or two later, depending on the variety. During this time, the farm undergoes some degree of fallowing before it is re-cultivated. Mixed cropping is common practice in both food crops and perennial cash crop farms. During the high farming season in February and March, it is common to see cassava, yams, groundnuts, beans (cowpea, [*Vigna* spp.]), maize and cocoyams planted on the same area of land. They mature at different times and are harvested accordingly. Cocoa is also cultivated with plantains, banana, fruit trees and vegetables. With increasing awareness of agroforestry farming systems, some NTFPs are being incorporated among cocoa plantations.

Horticultural practices are usually carried out in farm areas close to the villages or in home gardens in the backyard. Horticultural farms range from small vegetable farms along streams and rivers or in swampy areas to plantains, banana, fruits and vegetables in small patches around the village.



'Slash and burn' farming system. (Stella Asaha/FOREP)

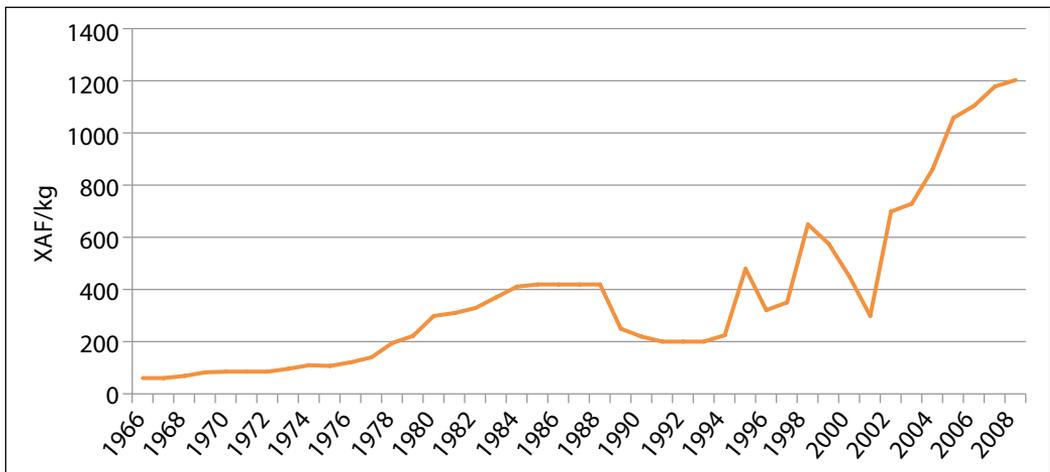


Figure 3.4 Mean annual buying prices of cocoa in Cameroon in Central African Franc (XAF) per kilogram.

Source: Blaevoet (2010)

Forest cover

Primary forests. These are undisturbed forests with more variety of plants and animals, which provide food, medicine, fuelwood, timber for construction and other services. In addition to its importance for the above-mentioned uses, some communities value this as future farmland for cocoa expansion.

Secondary forests. Abandoned farms and degraded forest are commonly called secondary forest. They are of different levels depending on how long they have been abandoned for. Very old secondary forest with a considerable amount of forest regeneration can be cleared for cocoa planting as it has gained humus over the years. The younger secondary forests are 'slashed and burned' for other food crops cultivation.

Cocoa agroforest. These are cocoa plantations with different types of trees: timber, fuelwood, NTFPs and edible fruits. This is very common in the landscape; cocoa agroforestry systems with up to 40%–50% tree cover are usually hidden under the canopies of secondary forests and can be mistaken for perfect tree cover from satellite images. Cocoa agroforests are common in more accessible areas to ease transportation of the products to nearby towns. Accessibility attracts more farmers to cocoa and oil palms. This may be one of the reasons why according to the preliminary land-use change analysis, this landscape consists primarily of forest loss along or near the major roads.

Protected areas

The research area features four main protected forest areas (classified and proposed) in close proximity to one another, created mainly for conservation interests to protect key plant and animal species. The Korup National Park is the largest and oldest protected area. It was created in 1986 and has an area of 125,900 ha. Banyang Mbo Wildlife Sanctuary covers a land area of 66,000 ha and was created in 1996. Mount Bakossi is the youngest; it was officially designated as a national park in 2007 and covers a land area of 29,320 ha. The Rumpi Hills, with a land surface area of 45,675 ha, is still under processing to be approved as a national park.

Timber exploitation

Timber exploitation in this area has been carried out mainly on a small scale, providing wood to the domestic markets. More than 90% of this is illegal and is conducted with no permit of any kind (personal communication from L Aserk, 2013). The area has however experienced some commercial logging in the past decades; Forest License No. 1669 of surface area 26,800 ha was granted to Transformation Reef Cameroon, a company that carried out the exploitation from 1987 to 1991, and Vannier in the 1970s (MINEPAT 2007).

Oil palm plantations

The establishment of oil palm plantations is not new to the Southwest Region as a whole, but in 2010 the Herakles Farm and SG-SOC plantation began in the Nguti area. SG-SOC is new in Cameroon and intends to establish fairly large plantations of oil palm in the Nguti area. The initial negotiation by SG-SOC has given them access to 70,000 ha of land spanning across two Divisions of the Southwest Region (Kupe Muanenguba and Ndian divisions) and engulfing the entire Nguti study area. The plantation also cuts across three local tribal groups: the Oroko, Bassossi and Ejagham groups. The allocated land is bordered by four ‘permanent forest’ areas – Korup National Park, Banyang Mbo Wildlife Sanctuary, Rumpi Hills and the Mount Bakossi National Park – and is in a forest area that has 31 villages with an estimated human population of 14,600 (SG-SOC 2011a).

The influx of agro-industrial farms coupled with the increasing prices of palm oil in Cameroon (Figure 3.5) has motivated farmers to include oil palm in their agroforestry systems or in some cases establish oil palm monoculture farms. The historical trend exercise with men in the study area revealed a shift in interest from cocoa to oil palm, with the main reason being encouraging domestic prices for palm oil.

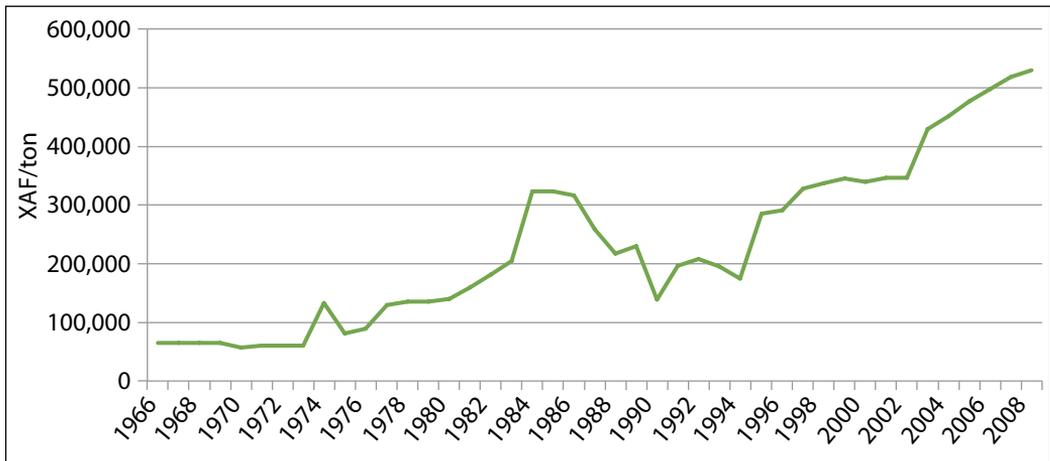


Figure 3.5 Mean annual buying prices of palm oil from Cameroon producers in Central African Franc (XAF) per ton.

Source: Blaevoet (2010)



Different land-use types in the research site: banana and plantains agroforest (top left), cocoa agroforest (top right), SG-SOC nursery signpost and young (bottom left), and old oil palm plantations (bottom right). (Stella Asaha/FOREP)

There are, however, some potentially negative consequences of such large-scale land acquisition for local people. If small-scale farmers currently use the land, it can result in the loss of the resources on which they depend for their food security and livelihoods. Furthermore, agro-industrial expansion may have negative impacts on the natural resource base, including air quality, water and biodiversity (Wilcove and Koh 2010).

Deforestation and land-use change analysis

A preliminary spatial analysis of forest cover change was performed on the Northwest Region of Cameroon using two Landsat images from December 2000 and two images from January, 2014. Images were converted to top of atmosphere reflectance and the NDVI was calculated. Figure 3.6 depicts the protected areas included in this study. There was a high level of cloud contamination especially along coastal regions, which will warrant additional analyses. A digital elevation model (not shown) was also derived from raster imagery. An improved GIS layer of national park boundaries was obtained which should also aid interpretation of landscape change results. This will enable a better depiction of elevation for the region and terrain information that will be useful in interpreting the results. The land-use change analysis was limited by the small number of Landsat images available for this region and the high degree of cloud contamination in the imagery. However, initial analyses showed that forest cover within protected areas appears to be mostly stable and possible construction of new roads was evident in Korup National Park between 2000 and 2014. Landscape change consisted primarily of forest loss along or near the major roads and outside of the park boundaries. This appears to be accelerating.

Local rules governing the use of natural resources

The use of other natural resources, especially forest resources, are generally free to the *indigenes* of a particular community except resources within the boundaries of protected areas, which are governed by a specific management plan. Communities have user rights to the resources in their area but this is limited to exploitation for use, not for commercial purposes. Access to the forest for NTFP collection, hunting and fishing is free to any *indigene* without restrictions and these resources are under no form of family or individual ownership. Timber trees and NTFPs found in farmlands or secondary forest are considered privately owned, meaning anyone who might exploit them would be considered a trespasser or thief.

Local perceptions of land-use change and associated drivers

The historical trends exercise conducted in the villages revealed some of the changes that have taken place over the last 20–30 years. Villagers noted a reduction in primary forest cover and the primary reason for this was cited as increased agricultural activities. The disappearance of primary forest was mentioned as the main reason for the dwindling resource base of NTFPs. This has encouraged the domestication and cultivation of some high-income generating NTFPs such as bush mango (*Irvingia gabonensis*), eru (*Gnetum africanum*) and bitter cola (*Garcinia kola*).

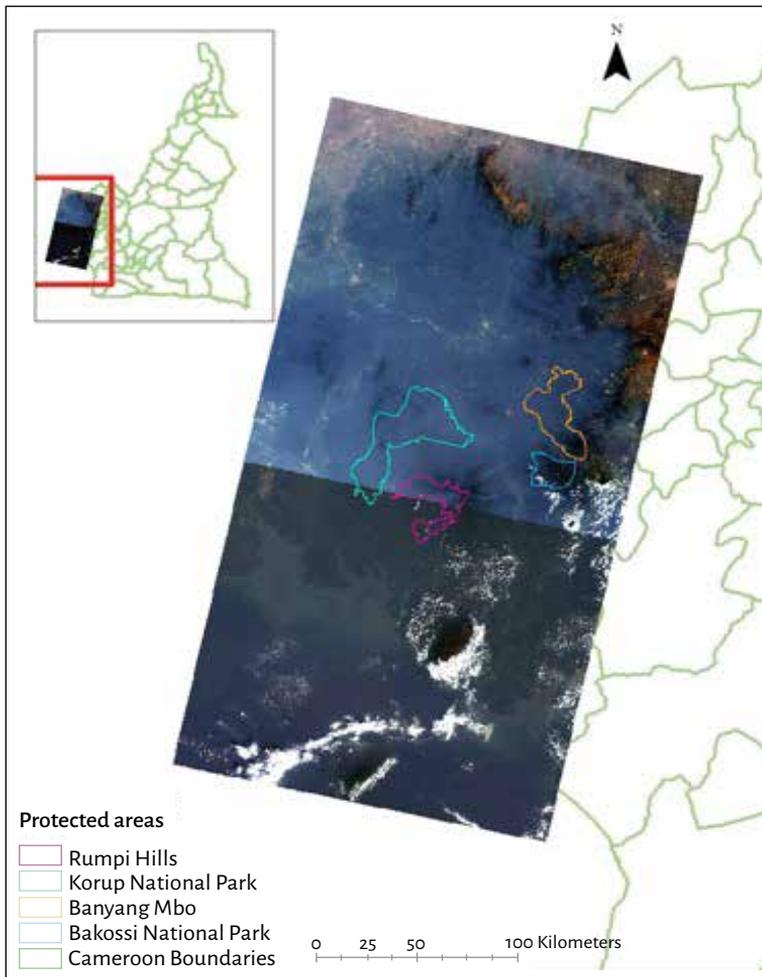


Figure 3.6 Map of the extent of the study area and the boundaries of the selected protected areas of interest.

Note: Two image tiles were needed to cover the area of interest. Imagery depicted is from Landsat 8, captured January 2014.

Source: Sarah Gergel, University of British Columbia

Prior to the late 1970s, coffee was the main perennial cash crop and villagers were highly dependent on it for income in addition to the sale of bushmeat. Then cocoa was introduced in the late to mid-1970s, but at a minimal level, until there was a shift in interest from coffee to cocoa. This shift became very effective and widespread when the farmers experienced a drastic fall in coffee prices in the early 1990s. At this time more efforts were put into cocoa production. Cocoa has undergone many fluctuations in price, which has also affected farmers in the past. However the steady increase in price from the year 2000, saw the cocoa prices rising from XAF 300 per kg to up to XAF 1600 per kg in 2004/2005. Population increase has been the main driver for the increase in the number of cocoa farms. Young people grow up and open up new farms as well as expand the farms they inherit from their parents.

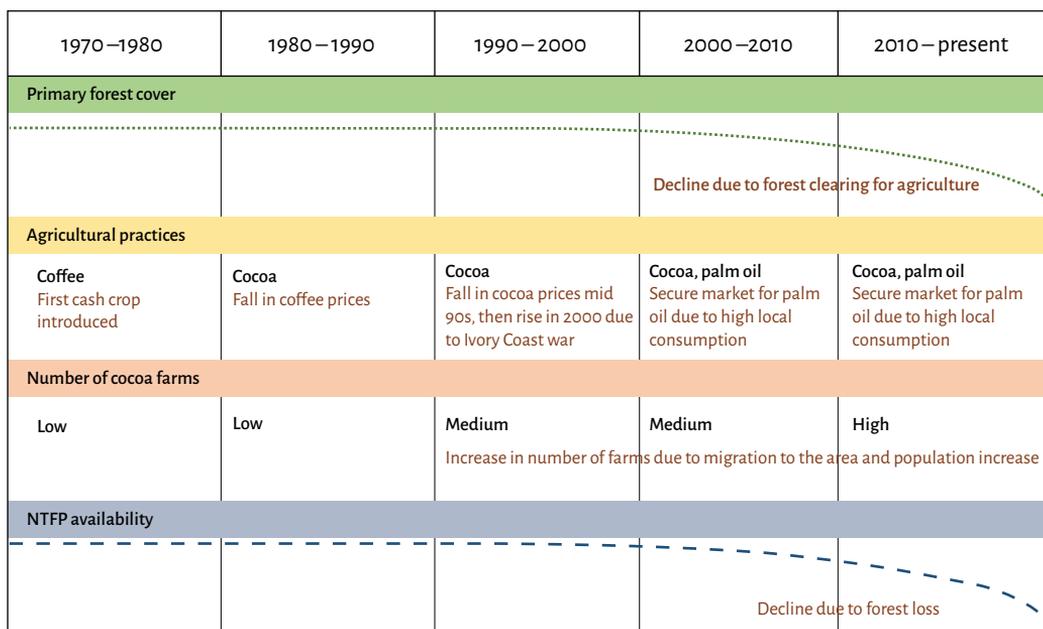


Figure 3.7 Historical land-use trends in the Nguti study area.

The cultivation of oil palm has been a common practice in recent years. Usually the palms are not planted by the farmers but appear through natural seed dispersal by rodents. These local palms provide families with palm oil and palm wine. In 2009 and 2010 there was an increase in interest in oil palm cultivation, attracting elites to country sites to purchase large tracts of land for this purpose (e.g. SG-SOC). The main motivation was the high rate of palm oil consumption locally in the form of vegetable oil, soap and cosmetics. These changes in land use and the perceived drivers of the change by villagers are summarized in Figure 3.7.

Community land-use valuation

From the habitat valuation exercise using the pebble distribution method, the valuation of land-use types was limited to primary forest, secondary forest, farmland, streams/rivers, swamps and home gardens (Figure 3.8). These were identified as important habitat types, valued for their different uses by the men and women of the communities (Figure 3.8). Both groups attached high value to farmland and secondary forest. While women valued home gardens as a source of vegetables and other food crops, the men did not value it as highly.

Primary forest was valued for its forest products including bushmeat for subsistence and income, as a source of fuelwood, traditional medicine and timber, for carrying out traditional rituals, and for future farmland for the expansion of cash crops. Meanwhile, secondary forest, which has already been exploited, was equally valued as a source of some forest products such as *njansang*, food crops, and wood for house construction and making other tools.

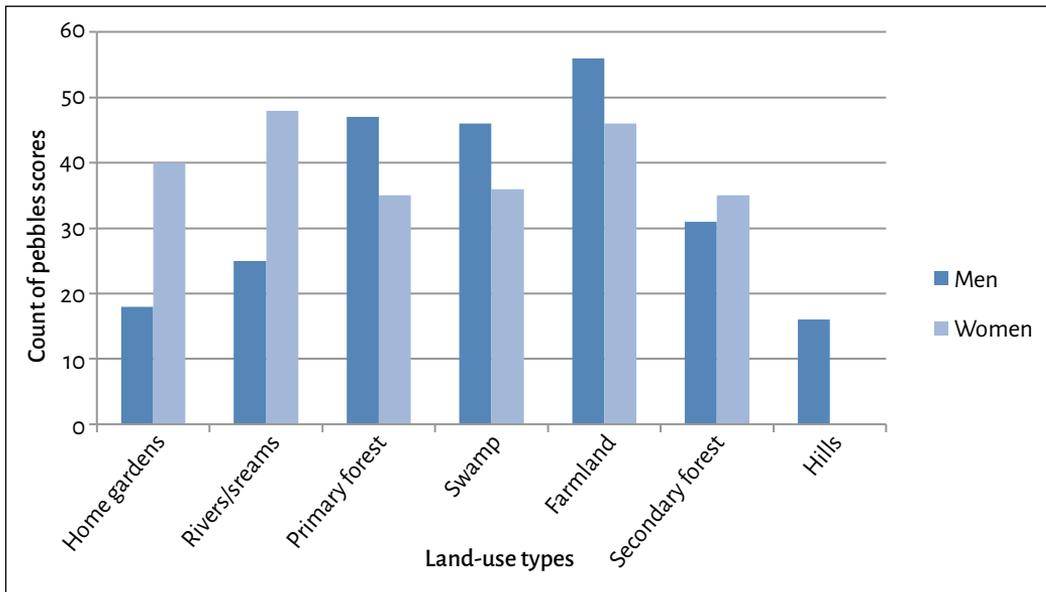


Figure 3.8 Summary of the scores from the land-use valuation by men and women in the three focal villages.

Farmland was ranked highly as a provider of food for families as well as for sales from farm produce. Streams and rivers were also valued highly but only by the villages that had a stream or river in close proximity. They were valued for fishing, providing water for other human uses including drinking and domestic uses, and for mixing of chemicals for cocoa spraying. Swamps were used during the dry months of the year, particularly for crops cultivated twice a year such as maize, beans and vegetables, because of the retained moisture. Due to this swamp access, during the dry season women could make considerable income and households had access to vegetables. Swamps were usually closer to homes and served immediate kitchen needs such as home gardens. Men used swamps and home gardens in various ways but swamps were often more appreciated by women, who cultivated varieties of vegetables, fruits, medicines and spices on them.

Primary forest-use valuation

The forest-use valuation exercise, which used the pebble distribution method, showed that there were contrasting views between men and women on the value of different forest uses. However, both men and women valued the forest as a source of water (Figure 3.9). The higher values assigned to water indicate that local people recognized the benefits of the forest related to the water catchment.

Both men and women did not place a high value on the forest as a cultural heritage site. This is thought to be due to the introduction of Christianity, which has gradually diverted people's attentions from culture and tradition. Generally, women seemed to value the forest higher than men did as women tended to value it for food, fuelwood, income and water. Men usually focused more attention on farm income than income from the forest. This was evident in most of the communities, especially the more accessible ones where,

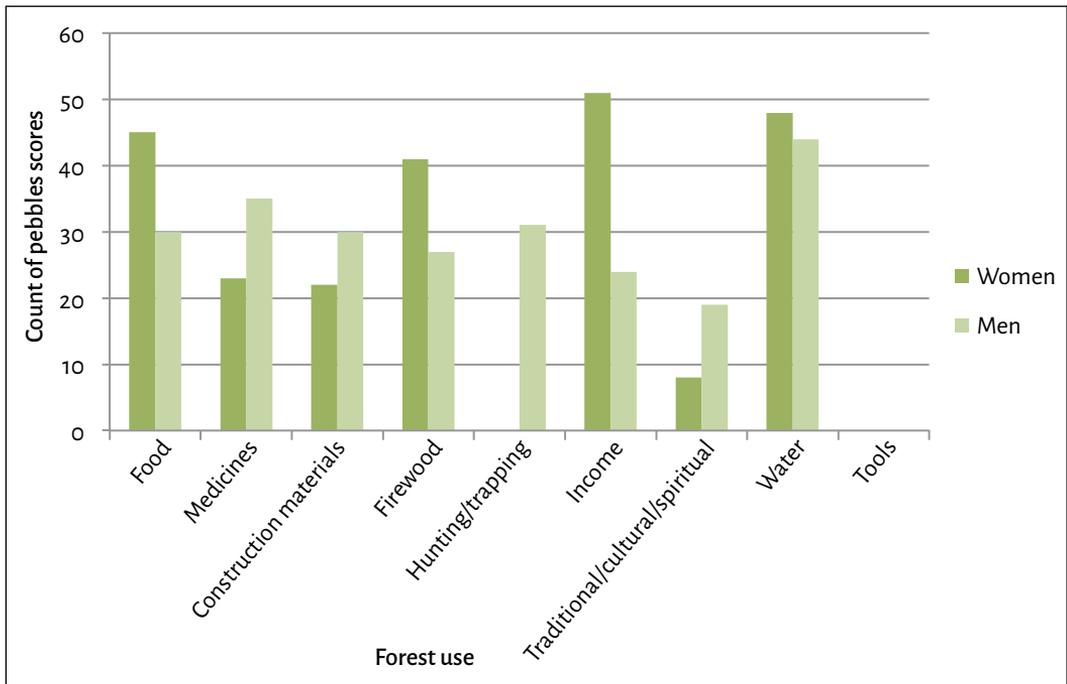


Figure 3.9 Summary of the scores from the forest-use valuation by men and women in the three focal villages.

unlike women, most men are dependent on perennial cash crops for income than on bushmeat or other forest activity. In the less accessible settlements it is easier to market forest products than farm products. For example buyers from towns and neighboring Nigeria will travel to the villages to purchase bush mango, *eru*, bitter cola and *njansang*, rather than cocoyams, cassava or plantains. Cocoa buyers will also go to extreme lengths to purchase cocoa in the most remote areas, giving the men reason to place a higher value on farming than on forests.

3.5 Interventions

3.5.1 Protected areas

From the early 1980s, the international community showed renewed interest in expanding the protected areas network in Cameroon (Table 3.5). Mainly driven by biological researchers and the rapidly increasing global interest in biodiversity conservation (outcomes of the Rio Convention and the Convention on Biological Diversity), international conservation NGOs – principally WWF and Wildlife Conservation Society (WCS) – proposed and/or supported the creation of new protected areas, or the upgrading of some existing forest reserves to national parks. These projects typically came with substantial funding in the form of bilateral aid projects supported by the British and German development cooperation agencies and the European Union.

Table 3.5 List of protected areas in the Southwest Region of Cameroon (not including forest reserves).

Name of protected area	Date of designation	Area (ha)
Korup National Park	1986	129,457
Mount Bakossi National Park	2007	29,320
Mount Cameroon National Park	2009	64,677
Takamanda National Park	2008	67,599
Rumpi Hills	In process	45,675
Banyang Mbo Wildlife Sanctuary	1996	66,000
Ndongere National Park	In process	233,400

Source: WRI (2013)

Higher priority was given to protection of the biodiversity in the Southwest Region compared to other regions. Four of the 24 national parks in Cameroon are located in the southwest, even though it represents just 5% of national territory.

During the past 27 years, the following forest reserves in the Southwest Region have been modified and upgraded to the status of national parks:

- Korup Forest Reserve became Korup National Park
- Takamanda Forest Reserve became Takamanda National Park
- Part of Bambuko Forest Reserve became Mount Cameroon National Park
- Monts Bakossi Forest Reserve became Bakossi Mountains National Park.

In addition, three new protected areas have been proposed but have not yet been gazetted:

- Ndongere National Park (in the mangrove forests of the Bakassi Peninsula)
- Kupe Integral Ecological Reserve
- Muanengouba Integral Ecological Reserve.

In the high conservation value areas within the study area (Mount Cameroon National Park, Mokoko Forest Reserve, Korup National Park, the Banyang Mbo Wildlife Sanctuary and the Rumpi Hills), past and existing interventions funded by national and international organizations such as GIZ, WCS, WWF, Rumpi Hills Development Project and other local NGOs have worked in close collaboration with the Ministry of Forestry and Wildlife (MINFOF).

WCS carried out conservation activities to create the Banyang Mbo Wildlife Sanctuary from the mid 1990s to the early 2000s. The main focus was the protection of wild animals including the forest elephants common in the area. In the early 1990s the Korup National Park attracted a lot of attention from international donors including the UK Department for International Development (DFID), the European Union, GTZ (now GIZ) and USAID, who all contributed toward the conservation of a cultural heritage site in one of the oldest forest areas in the world. However, by 2000, almost all of these donors had withdrawn support and the Government of Cameroon was left to continue

the conservation activities. Progress was slow and conservation was unsuccessful. The German Development Bank (KfW) then came in to support MINFOF in its Program for the Sustainable Management of Natural Resources in the Southwest Region. This program began operating in 2006 and supports conservation and development activities in the Korup, Takamanda and Mount Cameroon National Parks and more recently in Banyang Mbo Wildlife Sanctuary.

3.5.2 Community forests

The Government of Cameroon's main goal is to decentralize forest management to democratic and community management. The Cameroon 1994 Forestry Law was introduced and gave local communities the legal right to manage and exploit the forest for livelihoods as well as community infrastructural development. These regulations outline a process whereby communities can enter a 25-year agreement with the government for the management and exploitation of a part of the non-permanent forest estate (Acworth 2011). Although this has been implemented – 178 community forests with final management plans were established by 2009 (WRI 2013) – there were some limitations including the hijacking of the community forests by some elites. Some of the limitations were portrayed in the manual of procedure, which was reviewed by local NGOs and the government in 2009.

3.5.3 Council forests

Council forests were introduced in 2007, when it was realized that there were some loopholes in the management of community forests. Unlike community forest, council forest is managed by the local council but has a committee made up of representatives of the villages bordering the forest in question. Bordering the proposed SG-SOC plantation plots in the Nguti study area, there are two council forests located in the buffer zones of the Korup National Park and the Banyang Mbo Wildlife Sanctuary that are managed by the Mundemba and Nguti councils, respectively. The Mundemba Council Forest was established in 2010 and covers an area of about 36,000 ha while the Nguti Council Forest is about 12,000 ha and was established in 2009.

3.5.4 SG-SOC oil palm plantation

Herakles Farms is a US-based company that went into partnership with SG-SOC to establish oil palm plantations in the Southwest Region of Cameroon. In September 2009, it officially signed an agreement with the Government of Cameroon in which 73,080 ha of land was allocated to SG-SOC to develop oil palm plantations including the operation of at least one oil mill. SG-SOC is committed to developing and maintaining a sustainable, environmentally sensitive oil palm project with wide-reaching benefits for many aspects of the Cameroon economy and the local communities (SG-SOC 2011a). This plantation spans across two divisions of the Southwest Region (Kupe Muanenguba and Ndian divisions), within the customary boundaries of 31 villages with varying characteristics related to infrastructural development and access to social amenities (including the three villages selected for the scoping study – Figure 3.10). The agreement was signed with the Ministry of Economy, Planning and Land Administration, in which the latter committed itself to find and allocate an unspecified amount of land through a 99-year lease around the area of Nguti and Mundemba (Acworth 2013).

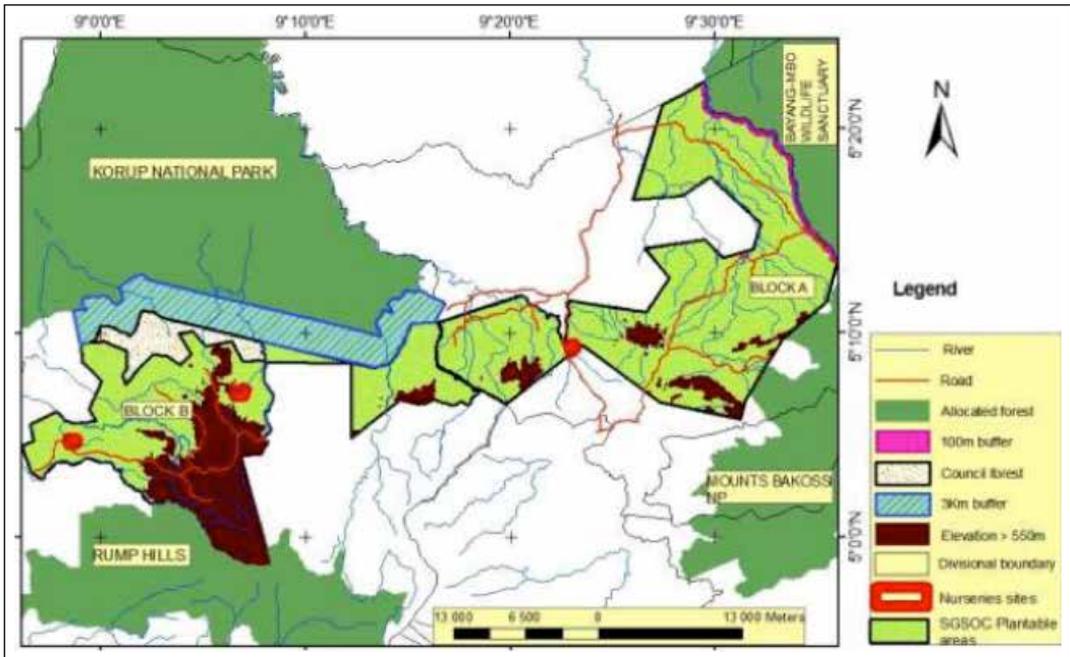


Figure 3.10 Location map of SG-SOC plantation.

Source: SG-SOC (2011a)

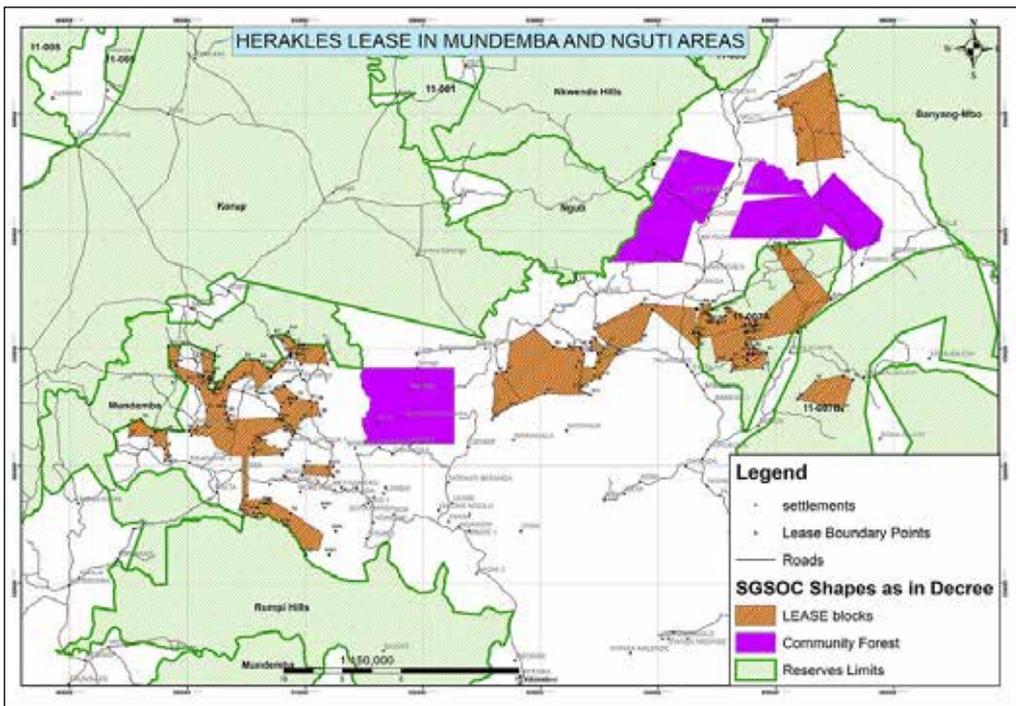


Figure 3.11 New SG-SOC allocated land.

Source: Map produced by Bakia Mor-Achankap (MINFOF)

The expansion may lead to loss of traditional relics such as sacred trees and sites, and would definitely put more pressure on remaining lands for cultivation of food and cash crops and on the remaining primary forest. The company authorities ignored local opposition from villages despite that local cultural and international organizations were in strong opposition of the activities of the plantations. The protesting groups cited lack of transparency, lack of concern of local communities, illegal demarcation, clearing of land and potential adverse effects on livelihoods (Nguiffo and Schwartz 2012). Following these protests and criticisms, the government went back to review the signed document and eventually reduced the allocated land to less than half of its original size (Figure 3.11). The current size now stands at 23,000 ha. The protests and review process has greatly reduced the activities of SG-SOC in the field. Currently only about 600 ha of the land has been planted, despite the large nurseries that were created in different parts of the site in 2009.

3.5.5 Other external interventions

Analysis from the field shows that the livelihoods of most of the households in the research site mostly depend on agricultural activities. Most of these activities are conducted without government or external support. However, in some more accessible areas of the research sites, there was some degree of support received from the Ministry of Agriculture and Rural development (MINADER) and/or the Ministry of Fisheries, Livestock and Animal Industries (MINEPIA). This was usually more technical support through on-farm training in cocoa and other farm product cultivation, as well as animal rearing (mainly pigs, goats and chickens). MINFOF in collaboration with other international organizations has been active in conservation of the forest especially in and around the protected areas (Table 3.6). Some local NGOs with external funding also intervened in these areas with development programs that aimed to improve farming, empower women, and provide education and infrastructural activities. Before the arrival of Herakles Farms in 2010, these remote, inaccessible settlements were occupied mainly by cocoa farmers. The fight to stop the expansion of the plantation has exposed the site to many organizations from within Cameroon and abroad who work with the villages to demand fair negotiations or total abolishment of the project.

Table 3.6 Interventions within the Nguti research area.

Intervention	Implementing or managing agency	Funding source	Date
SG-SOC plantation	Foreign company (Herakles Farms)	Private	2010
Council forests	MINFOF	KfW	2009 and 2010
Korup National Park	MINFOF, GIZ and WWF	KfW	Ongoing
Banyang Wildlife Sanctuary	GIZ	KfW	Ongoing
Forest management unit (logging concession)	Government of Cameroon	Logging companies	2012

Source: WRI (2013) and field data

3.6 Livelihoods, poverty and nutrition

3.6.1 Livelihood options

In the villages in the study area, people depend on at least one activity for income, including farming, collection of forest products and small businesses. All the villages reported very low or no value for forest incomes. Forest products were considered to be a subsidiary income source and hence not much importance was attached to it. All of the sites have a very high population of settlers; generally these groups were denied access rights to forest resources unless they paid extra money to the village council, although this did not happen very often.

Farming

In the three villages in the scoping study, as in other rural settlements in Cameroon, farming plays a key role in the lives of the people as its products provide food and income. Farming of both perennial cash crops and food crops is quite intensive; cocoa and oil palm are the main perennial cash crops and cassava, plantains, banana, cocoyams and *egusi* are the main income-generating food crops (Figure 3.12).

Non-timber forest product harvesting, hunting and fishing activities

Forest income barely features as an income source (Table 3.7) but NTFPs are commonly used and have traditionally been an integral component of forest livelihoods. Although they are not valued as important sources of income by most households, they are still collected for subsistence. However, modernization has limited the use of some products. For example, the use of modern medicines have replaced the use of herbs used previously, whilst the use of garlic, onions and purchased stock cubes have

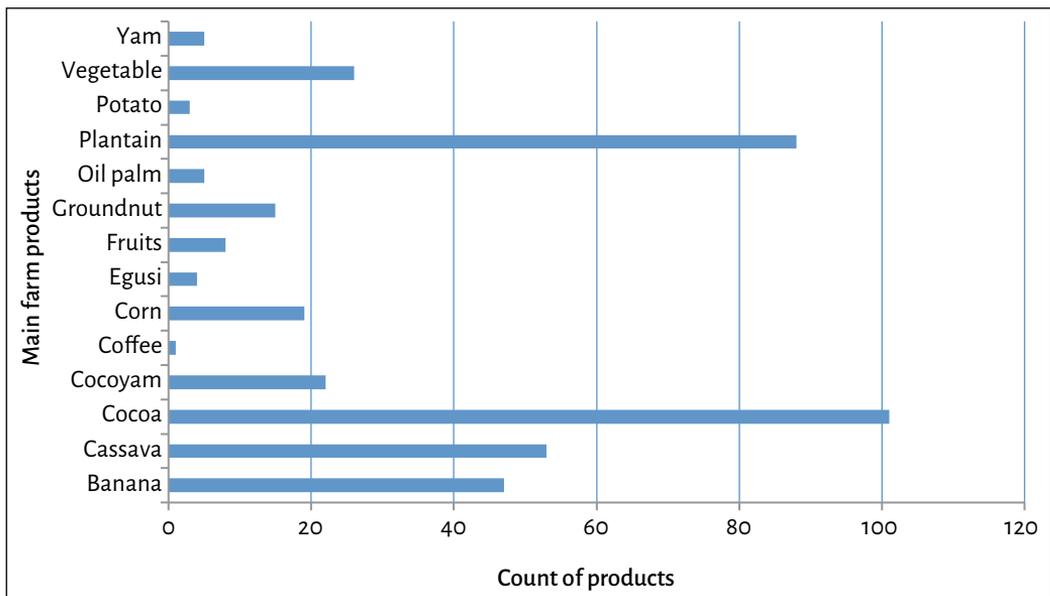


Figure 3.12 Main farm products in the study area.

Table 3.7 Income summary for the most common income-producing products.

Products	Lowest annual income (XAF)	Highest annual income (XAF)	Mean annual income (XAF)
Cocoa	37,500	3,600,000	739,456
Palm products	25,000	1,200,000	319,250
Cassava	2,000	750,000	85,805
Egusi	20,000	252,000	82,000
Plantains	3,000	500,000	68,882
Fruits	5,000	300,000	63,857
Cocoyams	7,500	648,000	61,429
Bush mango	21,000	140,000	46,600
Banana	600	300,000	36,440
Njansang	5,000	30,000	18,750

replaced leaves used as spices in the past. The main NTFPs identified in the three focal villages included: bush mango, *njansang*, bush pepper (*Piper guineensis*), bush onions, monkey cola (*Cola lepidota*), bitter cola, cola nut (*Cola nitida* and *Cola acuminata*), *eru*, African walnut fruit (*ngak*) (*Tetracarpidium conophorum*), chewing sticks (*Garcinia manni*), alligator pepper (*Aframomum* spp.), mushrooms, snails and other traditional forest spices.

About 99% of households in all three villages admitted that they collect NTFPs. This is also an indication of how close the settlements are to the forest. Sale of NTFPs was dependent on quantity of products collected and whether the collector used it or not. For all the sites, an average of about 75% of the households reported that they sold and consumed the NTFPs that they collected.

Hunting and fishing were recorded as other activities carried out in all of the sites, but at a very minimal level. All three sites recorded less than 10% of households who reported involvement in hunting and fishing and most of this was for home consumption. Data on NTFP collection and sales was barely captured in this preliminary survey. When households were asked to give details of their income generating activities, NTFPs were rarely mentioned. People tended to minimize the income from this source because the income is relatively small and/or because it is generated only in one season and is therefore easily forgotten.

Other activities

Villagers are involved in other income-generating activities. These include petty trading (business), farm laboring, teaching, dressmaking, mechanics, carpentry and palm wine tapping, etc.

3.6.2 Income to communities

From the information gathered during FGDs and wealth ranking exercises, cocoa stands out as the main income-generating perennial cash crop in the area, as seen in the number of households that mentioned it as their main farm product (Figure 3.12) and the average annual income generated by cocoa (Table 3.7). Although oil palms are fairly young, they are still recorded as generating considerably high amounts in average annual income with some households already making sales of up to XAF 1 million from palm oil. Cassava and *egusi* (melon seeds) farm products, which are usually cultivated by women, are also recorded as good income-generating products in the households. Of note, only two NTFPs featured as income generating and their mean annual amount was not as high as the farm products. This could be explained by the perceived scarcity of NTFPs, which discourages sales because households prefer to store for consumption.

3.6.3 Wealth ranking

The wealth ranking questionnaire showed that farm and house ownership, i.e. the capability to hire farm laborers, type of houses owned or rented and household possessions, were some of the indicators that contributed to the wealth index of communities. In addition to this, from the wealth ranking exercises conducted, the key informants in each village exemplified other wealth indicators (Table 3.8). This exercise highlighted that physical cash or money was not the only way people gauged wealth; other indicators such as the ability to afford education for children, the size and number of cocoa farms, the number of children and wives, and land assets were also considered.

Table 3.8 Wealth ranking characteristics from key informant interviews.

Rich	Fairly rich	Poor	Poorest
Owners of 12 poles ^a cocoa farms, which produce about 70 bags of 75 kg each	Owners of 10 poles cocoa farms, which produce about 10 bags	Owners of 5 poles cocoa farms	Farm laborers, do not own farms
Own personal houses and rent out others	Own personal houses	Own smaller houses	Dependent on parents' farms or small two party farm
Inherited properties (cocoa farms, houses)	Inherited properties (cocoa farms, houses)	Inherited houses	Petty traders
Children in secondary schools and universities	Children in higher education institutions	Typically large two party farms/newly established farms or owners of cocoa farms on pledge	
Own large orange and palm farms	Employment e.g. primary school teachers		
Cocoa dealers			
Fuel retailers			

a Poles are a local unit of measurements for land surface used by a few communities (4 poles = 1 ha).

3.6.4 Local food security

The availability of main staple foods such as cocoyams, yams, cassava, plantains and banana is usually not a problem for households because these are cultivated by almost all of the households (except for some single male households). However even though these crops are cultivated within the villages, some households still do not have enough to get three meals a day. To some extent, the main issues of food security focus on the constant unavailability of animal proteins from meat and fish consumption. Increasing government regulations as well as dwindling numbers of wildlife contribute to the unavailability of bushmeat and fish. Most of these communities now depend on smoked fish from coastal towns and imported fresh mackerel. For households to get access to these and other food and household items such as rice, beans, tomatoes, onion and kerosene, two important factors come into play: seasonal roads and the availability of money to buy (Table 3.9). During the low-income season, between planting and harvesting (March–July), there is rarely money for households to buy food, this period is usually considered the hunger season. Local vegetables are grown in the villages but become scarce in the dry season.

Table 3.9 Typical food and food-related items, their accessibility, and access constraints in the Nguti study area.

Items	Accessibility	Constraints
Food items		
Bushmeat	Limited	Legislation (government laws on bushmeat hunting) Dwindling resource base due mainly to deforestation and forest degradation Poor road access to markets
Fish	Limited	Low fish stocks due to reduction in volume of water Poor road access to markets
Rice	Limited	Not cultivated within the area Poor road access to markets
Vegetables (e.g. tomatoes, onions)	Limited	Not cultivated within the area Poor road access to markets
Beans	Limited	Not cultivated within the area Poor road access to markets
Other forest products (e.g. bush mango)	Limited	Reduction in resource base due to deforestation and forest degradation
Other items		
Water	Readily available	Stand taps, streams and springs located 2–15 minute walk from the village Water not yet contaminated
Fuelwood	Readily available	From farms and nearby forest (2–90 minute walk from the village)
Kerosene	Limited	Poor road access to towns, expensive

Rice is now seen as a common food in most households. This is an indication of the change in food consumed by people. At this rate of deforestation and plantation establishment, there is a possibility of future shortages in local staple food, which will include rice and other purchased foodstuffs.

3.7 Conclusion

The main objective of this chapter was to give a preliminary overview of historical land uses, the underlying drivers of land-use change and the impacts of land-use change on rural communities in the study area. This study area is of great importance as it represents a complex mosaic landscape of competing land-use activities. The different land-use types range from primary undisturbed forest to farmland with only annual food crops, bare degraded lands to rivers and streams. These different land-use types within the landscape provide services such as drinking water for the local population, cultural values, medicinal values, carbon reduction, nutrition and household income, agricultural land as well as income to the State.

Within the last two and a half decades, local communities have experienced different land-use changes around them, especially from the conservation sector. This has introduced conflict. For example, the creation of the Banyang Mbo Wildlife Sanctuary, Mount Bakossi National Park and Korup National Park resulted in local villagers facing the prospect of resettlement and other limitations to their rights to use the forest. With the establishment of these protected areas, the communities felt cheated of their customary land and their rights to the resources therein. More recently, the SG-SOC oil palm development now accounts for about 23,000 ha of land. This new development was received with mixed feelings; some people see it as a great opportunity for development of their area and employment for them and their children, while others see it as a threat to the future of the village and their children in terms of future land shortages. The ever-increasing demand for agricultural land, especially for cocoa and more recently for oil palm, has also attracted village elites and other settlers from other parts of the country to the landscape. This influx has extended to inaccessible areas where land is considerably cheaper, land tenure systems are simple, and acquisition and ownership processes are not very complex, unlike in other more exposed or relatively developed areas.

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Appendices

Appendix 3A Focus group discussion template

A) Ecological

1. Which of the land-use types (habitats) do you value most?
2. Which areas of land have been under change since the plantation project was put in place (e.g. forest → plantation or areas where farmers are forced to go elsewhere to grow crops, which may involve cutting down forests)?
3. Was the land use very different 10 years ago? If so, where have these changes been and why have there been changes?
4. What do you use the forests for?
5. What are your reasons for valuing the habitat?
6. Are there sites kept for future exploitation (protected land, commercial forest)?
Do you have protected areas?
7. How do you value the different goods (fuelwood, medicinal plants, timber and NTFPs)?
8. What are your reasons for the ranking?
9. What are the animals mostly hunted or animals mostly seen in your catch?

B) Social/health/education

1. How many houses are made of thatches and zinc?
2. Where is the health center located?
3. Where do women give birth (percentages)?
4. Is there a school in the community?
5. What are the cultural values of the village?
6. What traditional sanctions are imposed on people who damage the forests?
Are there any places traditionally protected from disturbance? If yes, please name them and state where.
7. Why are those places protected?

C) Economical

1. Where are the markets located?
2. Where are the traders coming from?
3. How many stores are there in the village?
4. What are the common things sold?
5. Where do you get (credit) money for business and agricultural inputs?

D) Administration

1. How is the village ruled?
2. How old is the village?
3. How is the structure organized and who is involved?
4. Who is on the council (note gender, local/stranger etc.)?
5. Are there any conflicts between people and wildlife?
6. How are conflicts managed?
7. What municipality is the village governed by?
8. Have there been any shocks/natural disasters recorded and how were they managed?
9. How are developmental issues carried out (e.g. development projects)?

E) Land tenure

1. Who owns the land?
2. Do individuals or families own patches of land?
3. Is land inherited?
4. How is land acquired?
5. Can you own parts of the forest?
6. Are women allowed to own land?
7. How is the land partitioned for development in the future?

F) Agriculture

1. What types of farms do persons own?
2. What are the products harvested?
3. Are there extension workers (agricultural officers)?

Appendix 3B List of categories used in pebble distribution method for habitat valuation exercise

1. Primary forest
2. Secondary forest
3. Farmland
4. Home garden
5. Rivers and streams
6. Swamps
7. Hills

Appendix 3C List of categories used in pebble distribution method for forest valuation exercise

1. Medicine
2. Income
3. Tradition and culture
4. Water
5. Hunting
6. Food
7. Fuelwood
8. Construction materials

Appendix 3D Historical trend charts



A

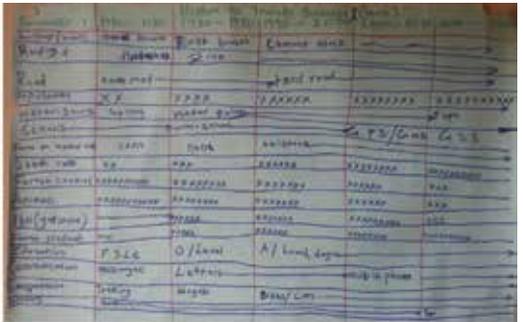


B

Figure 3D.1 Ayong men (A) and women (B) historical trend charts.



A

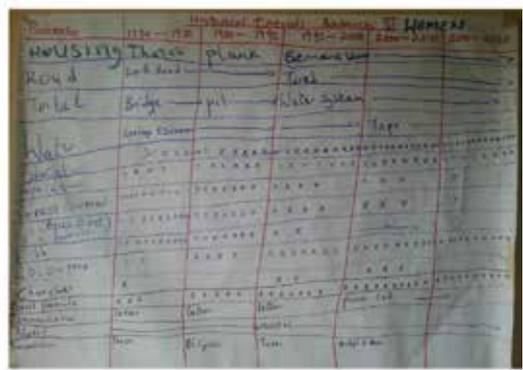


B

Figure 3D.2 Babensi I men (A) and women (B) historical trend charts.



A



B

Figure 3D.3 Babensi II men (A) and women (B) historical trend charts.