

# Chapter 7

## NWFPs help to generate income for poor households

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### 1. INTRODUCTION

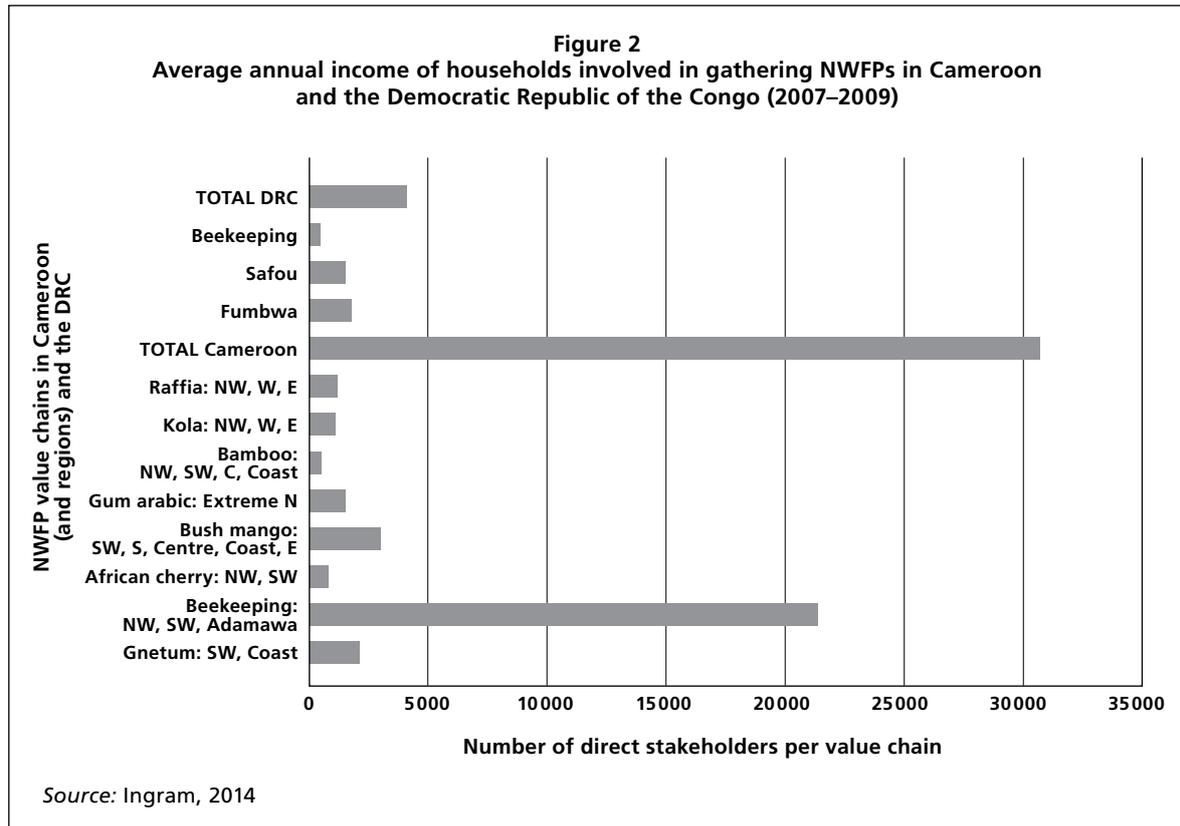
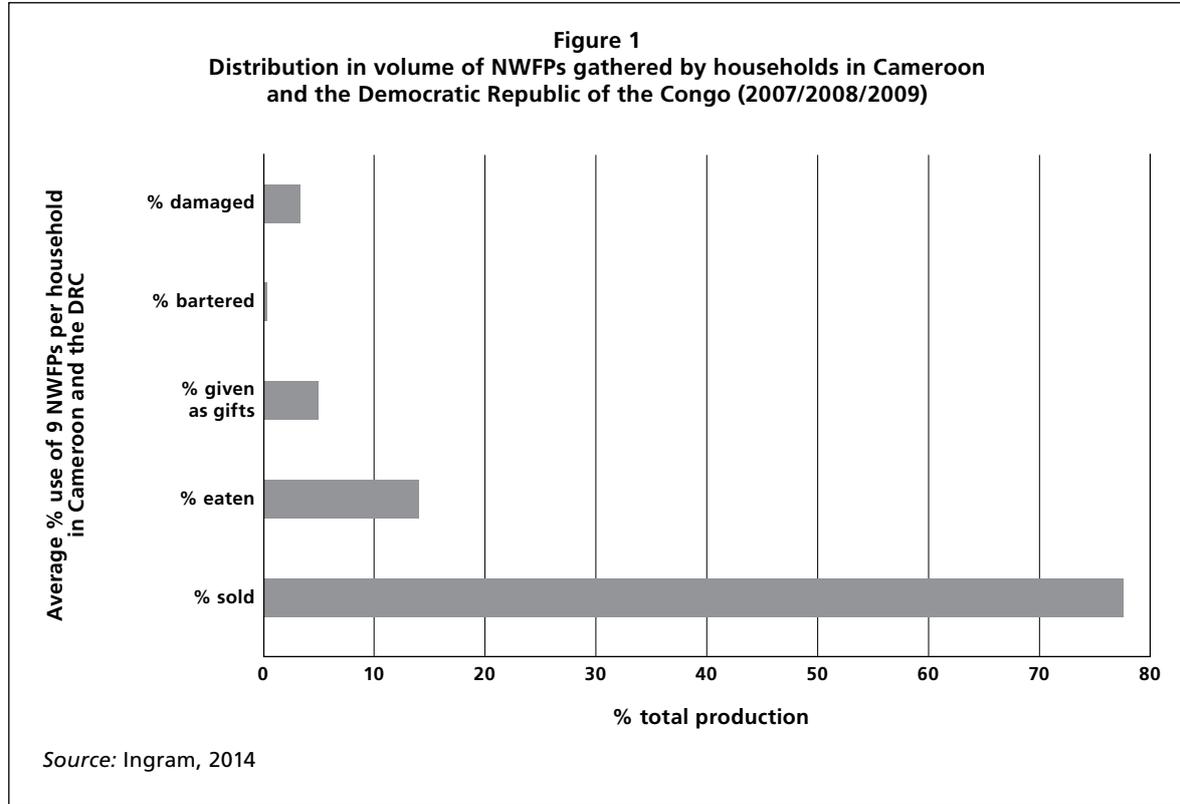
As stated in Chapter 2, NWFPs play a central role in the lives of the people of Central Africa. They contribute to income and provide many jobs for men and women in both rural and urban areas. Many studies show that in countries where the human development index<sup>12</sup> ranges from 0.361 to 0.703, people living around forests obtain 60 to 80 percent of their income from natural resources (Ndoye *et al.*, 1997; Awono *et al.*, 2009). NWFPs account for an average 40 percent of annual household income, the precise proportion varying depending on region, market, the products concerned and their seasonal nature (Awono *et al.*, 2009). Worldwide, the proportion is about 25 percent (Angelsen and Babigumira, 2010). In most cases, the poorest people play the leading role in gathering and marketing NWFPs at the local level. They rely on forest resources on a permanent basis to feed and treat themselves, obtain income, build dwellings and celebrate their rituals (Eyog *et al.*, 2006).

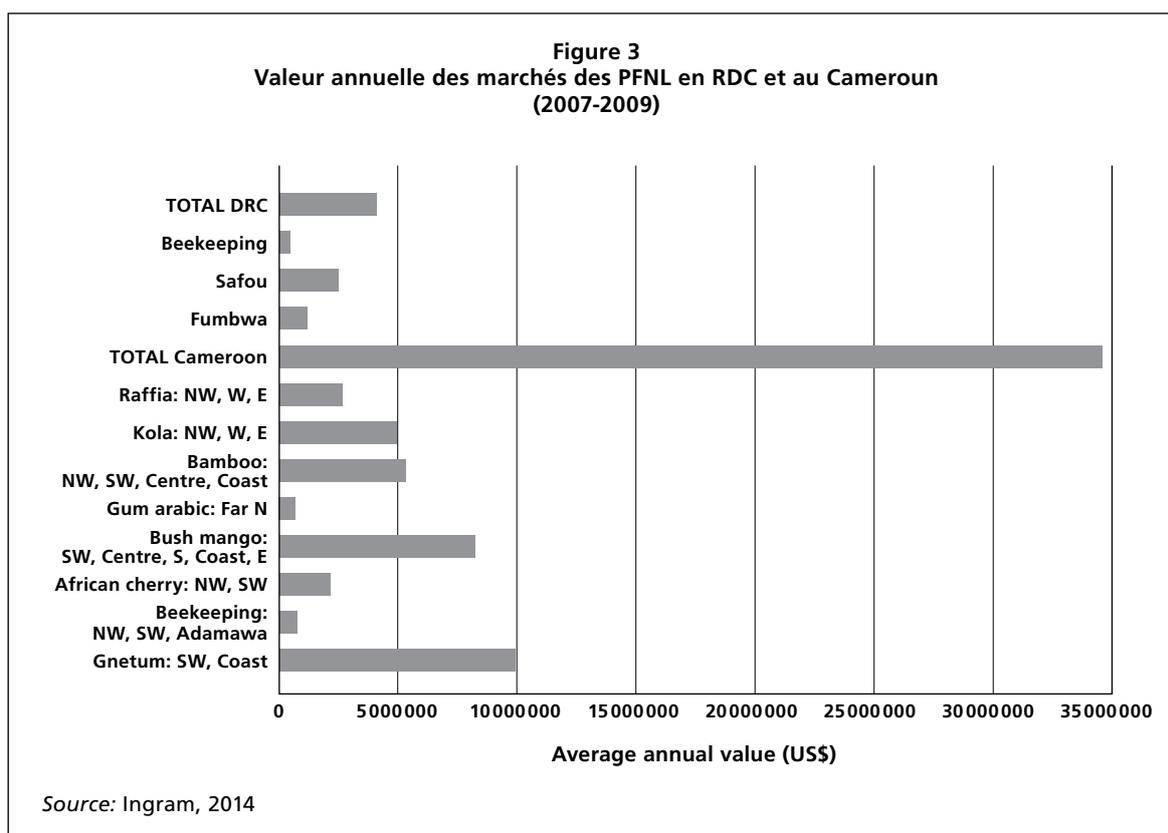
### 2. NWFPS: INCOME FOR POOR HOUSEHOLDS

Assessments carried out in 2010 by the African-Caribbean-Pacific Forest Research Network (ACP-FORENET) on NWFPs in Cameroon, the Central African Republic, the Republic of the Congo, Equatorial Guinea and Gabon showed that at least 500 plant species and 85 animal species are extracted from forests in the Congo Basin. In Cameroon, for example, about 500 plant species and 82 animal species are gathered, about 67 percent of which are used mainly in food and to make cosmetic products. Products extracted from about 60 percent of the species are used by households for medicinal or food purposes, or are processed by the pharmaceutical industry. In the Central African Republic, at least 57 plant and animal species have been listed as being used for medicinal and food purposes (N'Gasse, 2010). The same source reports that about 70 percent of the inhabitants rely on plants to stay healthy. In the Congo, at least 166 plant species are used for food and 176 for medicines to treat 289 ailments (Profizi *et al.*, 1993). In the Democratic Republic of the Congo, more than 169 plant species are used for food and 166 to treat ailments (Toirambe, 2007). In Gabon 58 botanical families have been identified, 29 of which have medicinal uses and 15 of which are used in construction (Walter, 2001). The differences reported among the countries of Central Africa may be attributed to the absence of statistics in some regions rather than to real differences in the use of NWFPs.

<sup>12</sup> The human development index or HDI was created by the United Nations Development Programme in 1990 and is a composite statistical index for assessing the level of human development in the world's countries, based on three criteria: life expectancy at birth, level of education and standard of living.

The consumption and exploitation of NWFPs depends on ecoregion and forest ecosystem, but also on ethnic group, local customs, distance from a market and alternative income-generating activities (Njiforti, 1996; Nasi *et al.*, 2008). Recent data on NWFPs in Cameroon and the





Democratic Republic of the Congo show that a significant percentage of the quantities gathered (an average of 67 percent) is traded (see Figure 1), while 17 to 53 percent of bushmeat is sold (Njiforti, 1996; Ayeni *et al.*, 2001a; Abugiche, 2008; Nasi *et al.*, 2008).

NWFPs are an important source of income and constitute a food safety net for households, especially during lean periods. The poorest people are those who depend most on income from the sale of NWFPs. On the other hand, these products are a source of extra income for those whose standard of living exceeds US\$2 per day (Paumgarten, 2007; Vedeld *et al.*, 2007; Delacote, 2008; Delacote, 2009; Tieguhong *et al.*, 2009). The level of organization of the value chain and the mode of governance varies, depending on product and country, and this affects the volumes extracted and the division of income among the stakeholders in the various value chains. It appears, for example, that intermediaries in general tolerate more risks in most of the value chains.

The NWFP market is worth several million dollars. The annual value of the nine main NWFPs in Cameroon and the Democratic Republic of the Congo in 2007/2008 was over US\$38.5 million (Figure 3). The income generated helps to raise the level of rural and even urban economies (Awono *et al.*, 2009). Unfortunately, the national services in charge of statistics do not always have reliable figures on the contribution of this sector to the national economy. NWFP markets provide higher incomes to specialized wholesalers than to the many retail traders who generally invest less capital but spend more time in the markets. As Figure 2 shows, more than 31 500 people are directly employed in the nine NWFP value chains that were studied in Cameroon and the Democratic Republic of the Congo. About 350 000 other people are also involved in the chains, for transport, handling and storage. This is at least ten times the number of people employed in the timber sector in domestic and export markets (de Wasseige *et al.*, 2009; Lescuyer *et al.*, 2009b).

Women control over 80 percent of the NWFP commercial sector, although men predominate in the wholesale trade, which sometimes entails lengthy travel in harsh and dangerous conditions on very bad roads (Awono *et al.*, 2009).

### 3. THE VALUE CHAIN OF SOME NWFPs IN CAMEROON AND THE DEMOCRATIC REPUBLIC OF THE CONGO

This section presents the NWFPs most widely traded in two Congo Basin countries: Cameroon and the Democratic Republic of the Congo. It provides an overview of the value chain for these products, its stakeholders and its specific economic, social and ecological features.

#### 3.1 *Gnetum* spp.

Commonly known as eru or okok in Cameroon and fumbwa in the Democratic Republic of the Congo, *Gnetum* spp. comprises two species of climbing plant or vine that are found in secondary and primary forests and on fallow land throughout Central and West Africa. Its leaves are used as medicine and a vegetable, and are known for their rich protein content. They also have the advantage of being available throughout the year. They are therefore very important for the food security of rural and urban households.

In Cameroon, 4 180 tonnes are gathered per year in the central, southwestern and coastal regions, while in the Democratic Republic of the Congo, 200 tonnes are gathered in the Mbandaka, Équateur and Bandundu provinces (Ingram *et al.*, 2010). This activity directly involves 1 885 people in Cameroon and 1 744 in the Democratic Republic of the Congo. It is a large-scale trade, with an annual market estimated at US\$13.8 million in Cameroon and US\$1.2 million in the Democratic Republic of the Congo. The sector provides 58 percent of the annual income of those involved in the Cameroon and 22 percent in the Democratic Republic of the Congo.

While not much fumbwa is consumed in Kisangani in the eastern province of the Democratic Republic of the Congo, it accounts for 6 percent of vegetable consumption in Équateur province. Households in Kinshasa, the capital, eat it about once a week. A plate of fumbwa costs on average US\$0.76 in the Democratic Republic of the Congo, while a plate of okok or eru costs about US\$1 in Cameroon. It is thus an item of everyday consumption within the reach of most households. Women dominate almost 79 percent of the eru chain in Cameroon, whereas men outweigh women in the Democratic Republic of the Congo where they make up an average of 50 to 60 percent of wholesalers and retailers. The major involvement of women in Cameroon is partially explained by the fact that for a long time men preferred growing cocoa, which was the jewel of the rural economy. During this time, apart from plantain cultivation, other income-generating activities, including NWFPs, were virtually conceded to women. This consolidated their position in the value chain, although men are now muscling into the wholesale sector (Manirakiza *et al.*, 2009).

There is growing pressure on the harvesting of *Gnetum* spp. Gathered in the natural environment where it has been growing for thousands of years, it is becoming rarer, while demand is constantly growing. In their concern to maximize the quantities picked, 50 percent of gatherers uproot the plant rather than cutting the liana to allow the plant to regenerate. Deforestation as a result of agricultural practices and timber extraction also contributes to the decline in the

natural stocks of eru, as 97 percent of the gatherers testify (Ingram *et al.*, 2012a). The situation is similar in other regions of Cameroon (Foundoun and Manga, 2000; Awono *et al.*, 2002; Bell, 2004). After several years of trials on field stations (Shiembo *et al.*, 1996), domestication has taken off in this country, with the launching of the national programme to promote eru cultivation and the practical experience of the Centre for Nursery Development and Eru Propagation (CENDEP).

The market is still for the most part supplied by what is gathered in the natural environment. Access to the resource is still free in the two countries. Although 15 percent of producers in southwest Cameroon cultivate *Gnetum* spp., less than 5 percent of the amount sold comes from their fields or plantations. It is also important to note the existence of post-harvest losses (between 4 and 26 percent of total production), depending on storage or transport conditions or because of delays resulting from negotiations with the forces of order along the roads. In Cameroon, transport is carried out mainly by truck on roads that are in a very poor state, or by sea in canoes. In the Democratic Republic of the Congo, chartered aircraft carry *Gnetum* spp., especially between Mbandaka, Kisangani and Kinshasa. These risks and high costs of transport result in a major difference between the price paid to the producer and the price paid by the end consumer, with the producer receiving less than 10 percent of the price paid by the end consumer (Manirakiza *et al.*, 2009).

### 3.2 Bush mango (*Irvingia* spp.)

There are two species of bush mango in the two countries, *Irvingia gabonensis* and *Irvingia wombulu*. The fruit of the former has a juicy, scented flesh that produces a sweet juice, while *Irvingia wombulu* has a smaller, bitter fruit. Their kernels are used as a flavouring and thickener in cooking, and are often preserved dried or processed in the form of a “cake”. Cooking oil may also be extracted, while the juice is used in cooking and wine-making, and the pulp is used as a black dye. The peel and seeds have medicinal uses. *Irvingia* wood is very popular for building and as fuelwood. More than 533 tonnes of kernels from the eastern, central, southern and coastal regions of Cameroon were produced in 2007, for an estimated value of more than US\$7 million. Three of these 533 tonnes were exported to Nigeria, Equatorial Guinea and Gabon. *Irvingia wombulu* is highly sought after in Cameroon’s southwestern region because of its potential for export to Nigeria. A market information system was set up in 2008 and provides new harvesters, especially those living in remote areas, with access to the latest information on the value chain. In 2007, the average annual income from the sale of bush mango kernels was US\$193 for producers acting as a group and US\$419 for individual harvesters. The profits achieved by individuals were thus much higher. Although the average production per person in a group was greater, the groups studied were in most cases not able to forge a link with wholesalers. This may be explained not only by the poor business skills of the groups but also by the isolation of the production zones.

Households that produce bush mango kernels consume 30 percent of their production on average, with the remainder going for sale and producing about 25 percent of their income, 26 percent of which is then used to purchase essential items and 18 percent to purchase health products for the family. The value of 1 kg of kernels in the production zones varies between US\$0.9 and US\$1.8, while the same quantity costs between US\$2.5 and US\$4.6 to the end consumer. The economic value of 5 000 tonnes of kernels was US\$7 855 537 in 2007. Producers receive between 30 and 50 percent of the price paid by the end consumer, with the price increasing

if the product is packaged in bundles or sachets. About 50 percent of traders and exporters in southwest Cameroon are Nigerians, who are established there seasonally. The outlook for long-term sustainable management is dependent on issues concerning legislation and harvesting permits, in a situation of growing demand from neighboring countries (Awono *et al.*, 2009; Ewane *et al.*, 2009).

### 3.3 *Prunus africana* or African cherry

*Prunus africana*, African cherry or pygeum, is a tree found in montane forests. For the past 15 years, Cameroon has been one of the major exporters of the bark of this species, with an annual average of 1 700 tonnes being exported to Europe and the United States. The international pharmaceutical industry uses the bark in the treatment of prostatic hyperplasia and hypertrophy of the prostate gland. More than 45 traditional uses have been recorded in Cameroon, ranging from anti-inflammatory and analgesic treatments to medication for stomach aches, urogenital ailments, allergies and malaria, and also for veterinary purposes. *Prunus africana* is the preferred wood for hoe handles and sculpture, while it is also used as fuel (Stewart, 2003). The pharmaceutical industry is responsible for its rise in value from US\$0.35 per kilogram for the raw bark to US\$350 for the packaged medicine. International demand over the past 40 years has caused prices to leap by over 600 percent, leading in turn to a massive increase in the numbers of gatherers and sellers. Classification of *Prunus africana* as a vulnerable species has then led to an international-level stiffening of the conditions for its extraction, notably in 1997 through the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES), which classifies it in Annex II. However, the 2007 inventory (Foaham *et al.*, 2009) showed that most harvesting of *Prunus africana* still takes place in natural forests in an unsustainable manner, as is seen from the fact that bark had been removed from right around trees at least once on 52 percent of the exemplars examined, so that 60 percent of this harvesting had been carried out in an unsustainable manner (Ingram *et al.*, 2012a).

### 3.4 Honey

Cameroon's honey production zones, notably the montane forest and Adamawa savannah zones, have more than 250 000 gatherers, 80 percent of whom are men. Three-quarters of these are organized in 70 microenterprises. Beekeeping contributes up to 50 percent of household income, followed by other agricultural products. At least 45 organized cooperatives producing filtered honey have been identified in the country's northwestern and southwestern regions, with each member having at least 20 hives. The average price for 1 litre of honey is CFAF 1 400 (US\$3). These groups also make a whole range of secondary products, such as honey wine, soap, cosmetics, candles and pharmaceutical products. The total value of beekeeping products is estimated at more than US\$800 000. Beekeeping in Adamawa tends to be a family or individual activity, with an average of 100 traditional grass- and rattan-built hives per person. Regional production is high and is estimated at 2 million litres per year, sometimes of inferior quality. More than 300 tonnes of wax are also produced annually and are exported to neighbouring countries and increasingly to the fast-expanding European market (Ingram, 2014).

Fuelwood is used to produce wax, but other species that are important for bees are also popular for producing fuelwood. Large-scale honey production with modern or even traditional hives has increased the demand for local materials. However, NWFPs such as rattan and bamboo tend to be unavailable in the Adamawa savannah zone. Beekeepers in northwestern Cameroon are facing a fall in production and a rise in the deaths of bee colonies, probably as a result of

the very high rate of deforestation (0.37 hectares per year) and forest degradation (Solefack, 2009). A biological certification project was launched in the Oku forest in the northwestern region by an intermediary organization in the value chain and has raised beekeepers' incomes by 50 percent, with 1 litre of superior-quality white honey selling for up to US\$5 in the large towns. Producers and traders are organized in groups and have formed a syndicate for exports. Quality and export standards have also been developed by the ministry responsible. The retail market for honey, wax, propolis and secondary beekeeping products is worth about US\$5 million per year (Ingram, 2014).

Unlike the situation in Cameroon, honey-producers in the Bas-fleuve (Bas-Congo province) and Batéké plateau (Bandundu province) zones in the Democratic Republic of the Congo work on a small scale, with about 60 producers, mainly individuals, and an average of seven hives per person. Wild colonies are the source of 22 percent, while the remainder comes from hives producing an average of 8 to 10 litres per unit. Total annual production is about 500 litres, 83 percent of which is sold in local towns at an average of US\$2.6 per litre, the price depending mainly on the place and the person. Consumers use the honey as medicine (65 percent) and food (35 percent). Processing and the use of secondary products are virtually nonexistent in these regions. On the Kinshasa honey market in 2007, the income generated by wholesalers was estimated at US\$237 000 and that by retailers at almost US\$67 000. The average annual income of individual producers was estimated at US\$3 500 (Ingram, 2014; Awono *et al.*, 2008).

#### **4. CONCLUSION: BETWEEN SUBSISTENCE AND INCOME-GENERATION, THE DANGERS OF OVEREXPLOITATION**

NWFPs fulfil many functions for the population of the forest regions of the Congo Basin, ranging from subsistence to income-generation. Studies focus basically on the NWFPs that provide food, medicines, materials and energy. Although they may not be staple commodities, some NWFPs, such as *Gnetum* spp., play a considerable role in the diversification of food sources, while others, such as safou and honey, contribute to the development of seasonal alternatives to agricultural activities. For many communities, these products also have a major cultural value. In Cameroon, for example, the kola nut is believed to strengthen ties between families during marriages. Formerly, local-level exchanges through trade or barter did not disturb forest ecosystems because the volumes gathered did not exceed the natural regeneration capacity. Management could thus be controlled and remain sustainable. When NWFPs gain in value and the volumes traded increase, the consequences of their exploitation are no longer the same. The *Gnetum*, *Prunus* and honey value chains show how stakeholders in these chains can earn significant sums, allowing a diversification in household income and the acquisition of basic goods and services. However, an ongoing lack of communication among the stakeholders should be noted, often because of unsatisfactory agreements on access to the resource and the application of sustainable harvesting techniques (especially when customary regulation is ineffective). These shortcomings result in overexploitation as certain stakeholders seek to obtain as large a short-term profit as possible.