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Constraints in Marketing of Agroforestry Products in the South West Region of Cameroon: The Case of Manyu Division

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Abstract

Cameroon's South West region has great potentials in the production of Agroforestry products but production and marketing are done using rudimentary technologies, which make it difficult to sustain growing demand for the products in both domestic and international markets. Difficulties in production have been attributed to social, economic, environmental and other constraints which grossly affect production and marketing. The main objective of the study is to examine difficulties encountered by actors in Agroforestry activities and how these problems affect marketing and income generation in the study area. The study was carried out in eleven random selected villages producing agroforestry products while respondents were selected through purposive sampling. Data collected for the study were analysed through qualitative and quantitative methods. According to this study, marketing of agroforestry products in Manyu Division and elsewhere in Cameroon can only play a significant role in poverty alleviation, if government and other stakeholders could provide an enabling environment backed by packages of incentives and motivations. This will significantly minimise production and marketing problems encountered by actors and stakeholders in the agroforestry value chain.

Key Words: Marketing; Agroforestry Products; Poverty alleviation.

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1. Introduction

In recent years, there has been a consensus among development practitioners and academics that improving market access for smallholders in agroforestry related products will lead to improvement in income and food security [1]. In many Communities in Cameroon, farmers have been introduced to agroforestry with little consideration for the markets for trees and tree products aside from potential productivity gains to food crops [2]. In Manyu where this research was carried out, there are difficulties of improving market access because of lack of infrastructural development in spite of increase production of Agroforestry products in the area. The author in [1], marketing failures often limit smallholders' ability to be linked to markets. As a result, this affects the incomes of farmers therefore frustrating any efforts towards poverty alleviation in farming communities that depends on Agroforestry for livelihood. Marketing chains are short due to inability to transport these products in their fresh forms into both domestic and foreign markets. This has been compounded by inability of the producing communities to process these Agroforestry products so that supply chains could be longer and less prone to post harvest deterioration [3]. These factors constitute a hindrance to effective marketing of agroforestry products in the area. Though there are cooperative societies to influence marketing of these products, these cooperatives face numerous difficulties in locating both domestic and foreign markets due to inadequate marketing infrastructure. Consequently, much reliance has been place on middle men who buy the products from individuals or cooperative societies and later sell in markets. Delays in transportations due to absence of market facilities such as roads and inadequate storage systems were identified amongst the major constraints which affect both product quality and prices of the products. It was realized that during peak seasons for examples, Agroforestry farmers have limited storage facilities and most processing is done using rudimentary technology which is inadequate to sustain product quality when transported into distant markets. The author in [4], there are non-ineffective linkages between tree domestication, product commercialization which requires involvement of food for domestic consumption pharmaceutical products and other industries which determine product marketing acceptability. Inadequate storage and poor preservation drastically reduce quality of Agroforestry products in the study area. The author in [5], commercialization of Agroforestry products has been recognized as having the potential to achieve dual conservation and development objectives by increasing the value of forest resources to local communities for poverty alleviation through livelihood development. It is now being recognized that expanding market opportunities for smallholders particularly in niche markets and high value products is critical to the success of agroforestry innovations [2]. However, these objectives cannot be realized in most communities producing Agroforestry products in Cameroon due to inadequate linkages between domestication and product commercialization. In Cameroon, Agroforestry products are an important source of income, livelihood and play a significant role in the socio economic development of most rural communities of the forest zones [6;7]. This therefore is a good opportunity that can be exploited to meet the challenges of poverty alleviation in Cameroon. According to [8], the commercial value of indigenous forest trees in Cameroon is estimated at US \$ 38.5 million per year, while FAO 2006 [9], projections on export volume of some these trees has been estimated at 58 000 tons per year. These estimates could be grossly underestimated due to problem of linkages between producers and marketers of Agroforestry products from Cameroon. This is because from study observations waste Agroforestry products out wears those that are opportune to reach both domestic and foreign markets. Timber tree management and harvest have a

significant impact on NTFP species which are usually not protected by commercial timber producers. This can lead to destruction and depletion of the latter species which are highly valued by local communities, and eradication of valuable germplasm necessary for regeneration of forests and species [10;11]. This depletion and destruction is being substituted by domestication of affected species in various forest areas in Cameroon. In Cameroon, indigenous trees species are generally managed in an unsustainable way [12]. Due to extreme poverty, NTFP gatherers maximize short-term income by overharvesting. Only 5 % of plant NTFPs in Cameroon is harvested from cultivated sources [12]. The author in [5], adoption of sustainable NTFP harvesting practices can show positive impact on resource conservation, socio-economic status of communities involved in NTFP use, quality of produce and economic returns. Marketing structure and its efficiency determines how the consumer is distributed among producers and different middlemen. The high marketing margins to middlemen may result in inefficient production due to the lower returns to the producers and/or higher consumer expenditure on the products. For improving the production efficiency and lowering the consumer expenditure, there is need for detailed investigation of marketing structure and margins of agroforestry products. There are many indigenous tree species that have the potential to produce marketable food, fodder, and non-food products [4;13]. Furthermore, some of these tree species like plum [*Dacryodes edulis*], pear [*Perseaamericana*], coconut [*Cocos nucifera*], orange [*Citrus sinensis*] are now the subject of tree domestication programmes destined to improve the yield and quality of these tree products [14;15]. The article pays attention on indigenous forest trees cultivated on farm land with the goal to alleviate poverty and improve living conditions of the Manyu people. One of the greatest problem encountered in the distribution of agroforestry products is lack of accessibility because most indigenous species are obtained from enclaved forest communities where transportation difficulties have hindered their availability in urban markets. Domestication of some of the indigenous species has increased food availability in domestic markets and improved livelihood of the Manyu people. Manyu division is endowed with several indigenous forest tree species with high economic value like 'eru' [*Gnetum*spp leaves], bush mango [*Irvingiaspp* almonds], country onion [*Afrostryax lepidophyllus*] [16] which when invested upon could improve income sources and health conditions for the poor. This study therefore seeks;

- To identify the market chain of indigenous forest trees in Manyu.
- Examine the challenges faced in marketing these products.

2. Materials and Methodology

Manyu division is located in the South West region of Cameroon and falls under the equatorial rainforest agro ecological zone. The entire Manyu division grew from the natural evergreen forest. The forest is immense, luxuriant and has a continuous canopy of leaves. The Manyu division has principally two types of vegetation; secondary forest, a virgin forest that is close to the mountain. The forest is rich in forest products such as medicinal plants and other non-timber forest products. Farmers make up about 60 % of the total population. The rest [40 %] of the population is involved in other sectors including administration, small commerce, teaching, transportation, hunting, fishing and forest exploitation. Activities like rearing of animals are done on part time basis as supplementary for income generation. The research methods that guided the collection and analysis of data was qualitative and quantitative. Techniques used included direct observation, individual in-depth interview, questionnaires and focus group discussions. The primary data were gotten from individual interviews

of Agroforestry framers, traders [middlemen] and transporters of domesticated indigenous forest products of priority importance [which were to be chosen by actors]. Also we had observation of common Agroforestry species used and sold in villages/markets to permit the researcher to identify commonly collected and commercialized species, collection methods, manner of trade [cash, credit, barter], and units of sale and prices. Individual interviews were conducted with key informants, who were identified by the farmers in cooperatives, who are familiar with the local population and its activities. Key informants were chosen based on their knowledge of forest resources in the area and the responsibility they had in managing them. While secondary data were got from books and reviewed articles. Also, the monthly income from sale of agroforestry products was calculated using the formula:

$$X_{ij} = Q \cdot [P_s] - CP,$$

where: X = net income generated for product i by collector j ,

P_s = selling price per unit of product,

CP = cost of production, and

Q = quantity traded per month.

Annual income was calculated by multiplying monthly income by the number of months per year that the respective products are available for collection and sale [17].

2.1 Sample size

Eleven villages were studied out of 235 villages in Manyu division. The choice of these villages was because Agroforestry is highly practiced in these communities and the added advantage of accessibility. Another added advantage was that the indigenous products were displayed in most of the village markets and this facilitated the administration of questionnaires to some of the respondents. In most of these villages, forestry species were already cultivated even in the backyards of many homes. It was discovered that the eleven villages selected randomly for the study cultivated most of the forestry species found in Manyu division. This includes the number of villages that were selected per sub division for the study. These villages are seen in the table 1 below.

Table 1: Villages visited during the study

Sub-division	Villages visited
Akwaya	Akwaya
	Bayangbu
Eyumojoek	Eyumojoek
	Nchang
	Egwekaw
Mamfe	Mamfe
	Bessongabang
	Ossing
	Okoyong
Upper Bayang	Bachuo
	Bachuoakabe

3. Results and Discussion

3.1 Market chains and product management

Many indigenous forest products have market values, and provide a valuable source of income for forest dwellers, as well as for rural and urban entrepreneurs [18]. Most of these trading takes place at local and regional scales where local people engage with the market on a part-time, seasonal, or full-time basis as their livelihoods require [19]. Both men and women are involved in the collection and sales of Agroforestry products nevertheless where women are the main dealers, the processing technology used is usually rudimentary, labour intensive, and the work often conducted in or near family residence [20]. Glaring evidence is the case with *Ricinodendron heudelotii* kernels in Cameroon [21]. Increasing numbers of men have become interested in the sector, which was traditionally occupied by women, as a result of the economic crisis of the 1980s. Indigenous tree species contribute up to 95 % of a rural household's annual income, providing a safety net especially in times of scarcity of staples [22]. Indigenous tree species originate from hinterlands and move along a route from harvesting to wholesale through exchange relations between actors in marketing or trade networks. These routes are often complex and dynamic yet poorly developed [23]. Marketing networks function has a critical bearing on their commercial viability and on the distribution of benefits between the actors involved [24]. Lack of proximity to markets is considered to be one of the most limiting factors for indigenous tree species

commercialisation initiatives [20] as is the case with Manyu. The secure and strong market, coupled with regular annual increase in market value [25] make domestication of bush mango a viable economic activity for many communities. In our study, farmers sometimes gathered or harvested indigenous species from the forest or farm, processed and sold them to traders [wholesalers and retailers], in line with [26]. More than 90 % of respondents figure 1 indicated that mostly middlemen buy their produce and sell to Nigeria where there is a steady market for agroforestry products. Only limited quantities are sold in the domestic markets due to problems of accessibility. Similarly, author in [27] identified bulk buyers in the humid forest zone of Cameroon, who accumulated the product and moved it to urban centers, and home use buyers who bought in small quantities (heaps, cups) for direct household consumption. Agroforestry products are sold on weekly markets organized for other agricultural products in the area. However, in the East Region, prices are determined by buyers, especially in the Baka communities where buyers operate a barter system and exchange basic household commodities like soap, rice and kerosene for *I. gabonensis* kernels [28]. Whereas in Manyu most farmers belong to a cooperative who bargains on behalf of the farmers for a stable market price. Unfortunately, sometimes money from sales does not come in immediately. This has made some of the farmers to sell directly to middle men at any price to be able to have ready cash. According to the respondents, the construction of Bamenda-Mamfe-Ekok and Kumba-Mamfe roads have increased the number of buyers from Bamenda, Bafoussam, Douala and Kumba. According to official sources, there are about eighty-four Common Initiative Groups and Cooperatives on forestry product in three key areas of the south west region; Takamanda, Korup and Bayangbu. The groups are involved in production and marketing of agroforestry products. Figure 1 below indicates the percent of sales respondents make in agroforestry products and target destinations.

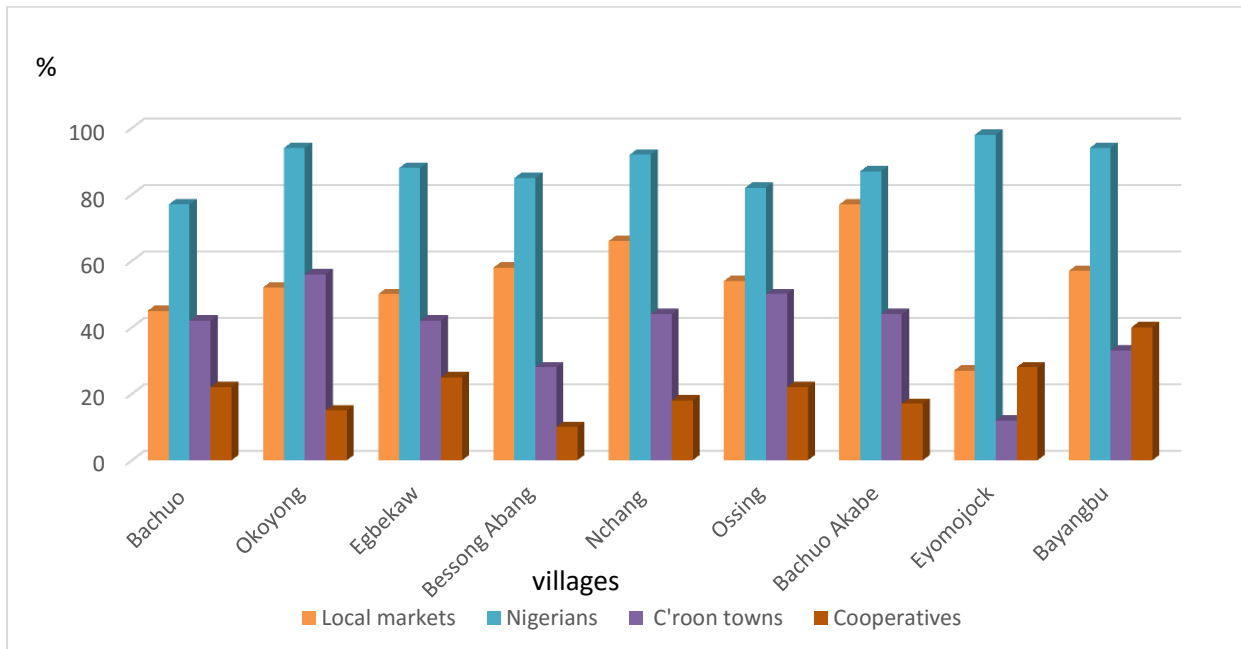


Figure 1: Percentage respondent sales of agroforestry products and target destination

Figure 1 reveals that 98, 94, 92, 88, 87, 85 and 82 % of respondents from Eyomodjock, Okoyong, Bayangbu, Nchang, Egbekaw, BachuoAkabe, Abang, respectively produce for the Nigerian markets. In fact, they sell to

middlemen and Nigerians who buy and sell in Nigerian markets like Ikom, Aba among others. It was observed that the tarring of the Mamfe-Ikom- Enugu trans-African road, has increased trade in the Cameroon-Nigeria border. Bush mango is particularly traded to Nigerian markets for their traditional dish “Ogwono”. The volume of trade has increased with the recent development though product sales to Cameroonian towns like Bamenda, Bafoussam, Douala, Kumba is comparatively low. It was revealed that there are increasing numbers of rural dwellers organized into cooperative societies for the collection and sale of agroforestry products figure 1. Most respondents in areas where FREPROM cooperatives are found indicated that their production and distribution is mostly handled by the cooperative. Bayangbu 40 % is a case in point where there are 19 cooperatives operating in the area and deal with agroforestry products. A major organization involved in the market chain for promotion of local products and sustainability of NTFPs is the Forest Resource Processing and Marketing cooperative-FREPROM-NTFP-COOPERATIVE. It is involved in organization and capacity building of groups, purchase of non-timber forest products and domestication of NTFPs. FREPROM assists people in different villages of the region to form common initiative groups in order to collectively sell their products. The sale of NTFPs raises revenue which is distributed as bonuses to collectors. This initiative has promoted the domestication of these products and promotes sustainability of agroforestry systems. Major products identified by this cooperative in its trade chains are *Irvingia gabonensis* (rainy season bush mango), *Irvingia wombulu* dry season bush mango, *Afrosyrax kamerunensis* (country onions) and *Ricinodendron heudelotii* (Njansa). Table 2 below reveals the number of Common Initiative Groups (CIGs) and cooperatives involved in the practice of Agroforestry in the different areas of Manyu.

Table 2: Distribution of Common Initiative Groups and Cooperatives

Zone/Area	No of CIGs or Cooperatives
Takamanda	37
Korup	28
Bayangbu	19
Total	84

Following the location and distribution of these CIGs and Cooperatives in the region, three market sites have been identified to cover the three areas. These are the Takamanda area, the Korup National Park/ Upper Ejagham area covering two sectors including the CAFECO forest concession zone and finally the Bayangbo wildlife Sanctuary market sites. In 2012, the pilot phase was initiated and in 2013, 3 tons of bush mango was collected, 6.1 tons by 2014 and this figure evolved to 8.6 tons by 2015. According to FREPROM, quantitative data on country onions could not be made available because processing is difficult and the project is largely in its pilot phase. However, available figures shown to researchers indicate enormous potential existing in the region that could bring benefits along the market chains and create employment in the sector. It is envisaged that with the available potential, production rates could evolve, doubling annually. The distribution chain is initiated from cooperative who collects the products from households and make records, then to village buyers or wholesalers who export to Nigerian markets. It is however important to note that collection by households is from the wild or from farmlands. The market chain is demonstrated in the figure 2. This show the major Agroforestry products are sold. The market situation for the sale of NTFPS from the wild /farms has been one of

the major source of income for the Manyu people. Priority NTFPs were channelled through different intermediaries from collectors to consumers as shown in figure 2.

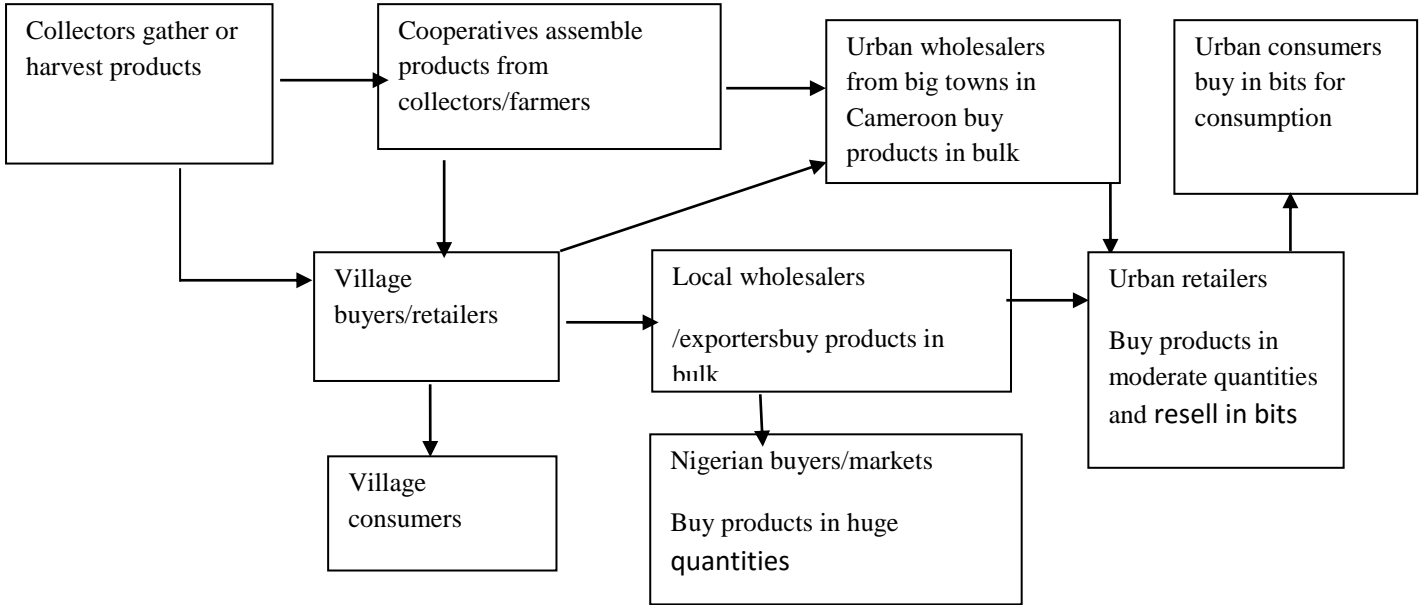


Figure 2: Supply chains of major agroforestry tree products in Manyu division.

The local sales of agroforestry products are measured in 15 litres and 25 litres containers and prices vary according to season due to seasonal harvests of some products like *Irvingia gabonensis* during the rainy season and *Irvingia wombulu* in the dry season. Farmers who are engaged in cooperative groups experience relative stability in prices of their products resulting from seasonal variation in sales. This is because cooperatives collect and sell the products before returning with the bonuses of cooperative members. The process according to respondents takes time for cooperative member to receive their bonuses. Due to rural poverty and need, including inaccessibility of most villages, most farmers sell to individual buyers figure 1 who often take advantage of poor economic status and underpay collectors/producers. However, individual village buyers remain the major buyers in the market chain as they control more than 70 % stocks bought from households. The major destination market remains Nigeria. This is line with author in [29], who identifies Nigerian market as one of the most successful markets for NTFPs exploited in Cameroon, given the diversity and quantities of products exported. Author in [30] showed that nearly 2 400 tons of bush mango were exported in 2007 from Cameroon to Nigeria, and accounted for 89 % of annual exports for NTFPs product. It is therefore clear that the Nigerian market is a great consumer of NTFPs exploited in Cameroon [5] The number of people employed by the NTFPs sector in Cameroon and the Democratic Republic of Congo is double the number employed by the forestry industry [31]. Author in [32], NTFPs are also growing rapidly in international markets but require a number of critical preconditions, involving a favourable law and policy environment, well developed and accessible markets, secure tenure, and a well-managed resource base [32; 33]. Figure 3 and 4 are pictures of “bush mango” warehouse and market centre in Mamfe. Collectors are able to improve on their bargaining power

in this platform.



Figure 3: Sign post of the Bush Mango Market Centre, Mamfe, FREPROM



Figure 4: The Bush Mango Market Centre, Mamfe, FREPROM

4. Impact of Agroforestry on household income

Figure 5 below shows the impact of Agroforestry on household income in Manyu depending on the various villages in the study.

According to figure 5, the highest incomes were generated from the sale of bush mango (2, 583, 295 FCFA), eru (2,035,445 FCFA) and njansa (675,325 FCFA), which are the major agroforestry products in the zone. There is also a very high demand for these products from neighbouring Nigeria which constitutes a big market for the products. Bush mango was sold at averagely at 1250 FCFA per kg in the study area, 1700 FCFA for a kg of

njansa and a kg of eru leaves was sold for 500 FCFA.

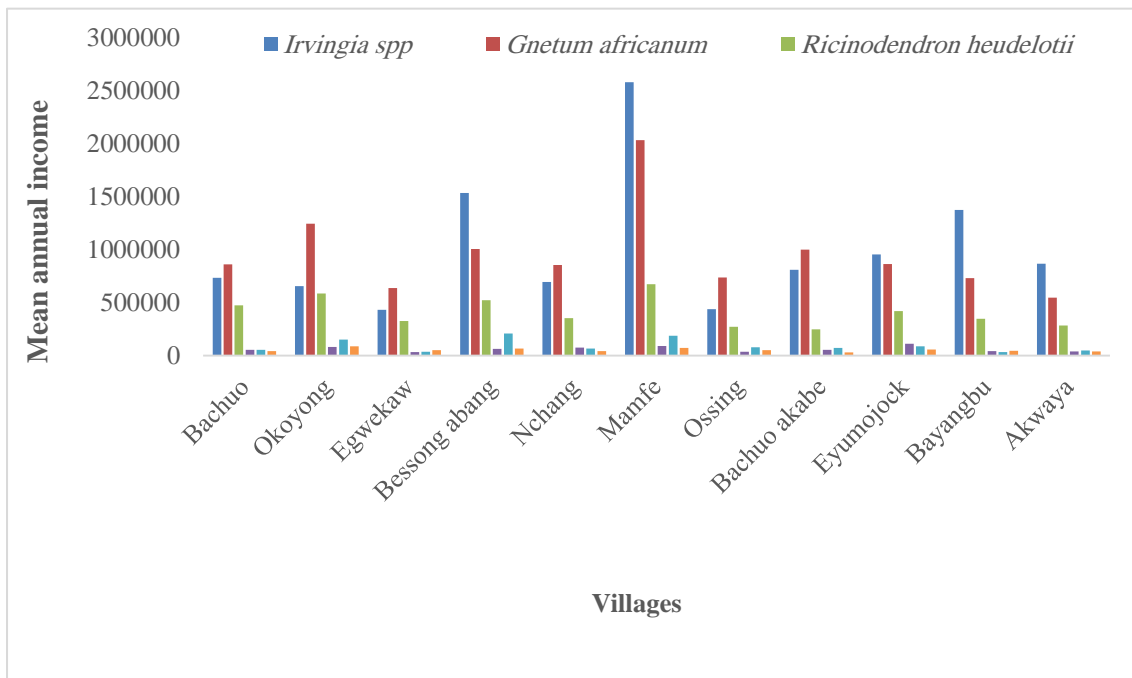


Figure 5: Annual mean income of collectors/producers from agroforestry products in Manyu in 2015.

Apart from being a major part of the traditional Nigerian cuisine, bush mango is available in both the dry season as *Irvingia wombulu* and the rainy season as *Irvingia gabonensis*. Eru is also available throughout the year, thus, they do generate higher incomes. The major urban or sub urban areas such as Mamfe, Bessongabang, Okoyong, Eyumojock and Bayangbu recorded highest values for most of the products. This is probably because with their semi-urban status, accessibility is easier, hence a better demand in terms of number of buyers, and possibly, higher prices. The latter areas also act as assembling centres where products from the hinterlands are brought together for sale. The findings of this study are similar to those of [35,36] which identified the latter products as major sources of income in communities in the South West, East and South regions of Cameroon. *Piper guineensis* bush pepper, *Afrostryax kamerunensis* country onion and *Garcinia kola* bitter kola are also sold, but in smaller quantities. The challenge here is to transform them to meet market standards. It is worth noting that not all the products sold were harvested from agroforestry sources. Producers also collected some of the products from the forest, especially for *Piper guineensis*, *Afrostryax kamerunensis* and *Garcinia kola*. The government should therefore train more extension workers to help in the valorization of products from indigenous tree species. Extension education will improve farmer awareness on agroforestry practices for sustainable development on practical aspects such as tree-crop interactions, nursery establishment, seed pretreatment and tree planting activities. There is need to improve strategies for accessing functional and efficient input markets and market support systems for indigenous trees products. Such strategies should increase prices paid to farmers and reduce cost incurred for needed inputs like grafted plants which farmers complained are unaffordable due to poverty.

5. Problems of Trading in Agroforestry Products in Manyu Division

The study identified several difficulties that affect trade in agroforestry products. These include disorganized markets dominated by informal sector activities. Eighty percent of the informants hold that they do not really have access to organized markets. Most often they sell their products to middlemen who determine market prices for their sales. However, 20 % of the informants prefer to go through cooperatives that provide stable market prices. The difficulties with the cooperatives face are found below as stated by Pa Ashu of Ossing village; *“Cooperative is the best avenue to sell our Agroforestry products but unfortunately the earnings from our sale most often takes too long to come by. This makes it frustrating and sometimes we end up selling to the middlemen who pay immediately though less for our sales”*. Poor methods of harvesting of Agroforestry products in Manyu division. Some of these communities have little or no extension workers to educate farmers on planting and harvesting of Agroforestry products. The production and harvest of some of these products are limited. Ninety percent of the informants had never met with an extension worker to educate them. While only 10 % of informants had the possibility of talking to extension agents. This is because as stated by Pa Enow of Mamfe center; *“It is difficult to have contact with extension agents and even when we do, they rarely come around to inspect the work we have done so far. Most often the follow up is done just by ourselves. Sometimes we even prefer to come together in a group to share knowledge on planting and harvesting in order to improve our yields.”* The existence of several entry and exit points due to porous nature of Cameroon-Nigeria borders which render official controls difficult. This therefore has made it difficult to quantify the amount of products that are being carried out of Cameroon. Also the problem of processing of these products which is still dominated by use of rudimentary technologies with end products not standardized. This makes it difficult to export to the international markets. This was confirmed by 95 % of informants on the field. Poor road network in most of the communities in Manyu. Most of the major farms for the cultivation of indigenous forestry products are far off. Farmers need to trek for long hours to work on their farms. Also, transportation of the products poses another major challenge for the farmers. Officials of the ministry of forestry and wildlife (MINFOF), customs/immigration officials, and forces of law and order complained of the existence of multiplicity of roads which makes checks for forest products difficult. Also, access to Nigeria markets and non-declaration of products and waybills at immigration control posts at the borders is a call for concern. However, mixed control check points are being reinforced by Eyumojock and Akwaya councils.

6. Conclusion

Marketing constrains can increase the cost and difficulties encountered by actors in the marketing and sales of their products but with the introduction of cooperatives and collective action/efforts by the community is able to maintain a sustainable market price. The contribution of the cooperative FREEPROM has provided a stable market prices to these products even though there still exist some short comings. There is need to improve strategies for accessing functional and efficient input markets and market support systems for indigenous tree products. Such strategies should increase price paid to farmers and reduce cost incurred for needed inputs like nursed plants which farmers complained are unaffordable because of poverty. The government should therefore train more extension workers to help in the valorization of products from indigenous trees species. This will go a long way to increase production for marketing. Extension educators will also be instrumental in improving

farmer's awareness on agroforestry practices for sustainable development on practical aspects such as creating markets where stabilization and production will be of major concerns.

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