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## **Problematic of Rattan Resource Management: Conservation and Post-harvest Concerns in Bamenda Town and Its Environs**

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### **Authors' contributions**

*This work was carried out in teamwork among all authors. Author GZM designed the study, accomplished the statistical analysis, wrote the protocol and wrote the first draft of the manuscript.*

*Author NYT managed the literature searches, did cartographic works and proofread the work and author NDT managed the all over statistical analyses of the study. All authors read and approved the final manuscript.*

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### **ABSTRACT**

The use of durable forest resources in urban areas has raised the question of link between conservation and usage patterns. Population growth in Cameroon urban areas has continued to trigger constant demand for forest resources notably for rattan resources. Owing to the thriving domestic use and trade indicators, it is observed that, the furniture processors have been experiencing considerable demand of rattan products. It was pathetic to observe that, though the whole chain of rattan dependable activities have become an integral part of livelihood strategy for many urban communities, it is without any regulatory rearmament. Such scenario has until recently been ostensibly clear that in Bamenda town is an epitome for non-awareness of the exact species used, ecological attitudes, post-harvest losses, innovative technologies and trade letdown. In the context of such lack of awareness, most socioeconomic and conservation benchmarks have

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remained trapped in inappropriate operations. It is in this light that, Bamenda town displays a range of concerns about the rattan resources management stakes and challenges. Thus, the main objective of this paper attempts to harness suitable socioeconomic and ecological strategies to ensure sustainability with significant potential for the rattan sources to the thriving investors' livelihood. The study therefore, explores the stakeholders' treasure on rattan resources derivatives and perceptions on conservation and socioeconomic standing in Bamenda town, which is a heavily dealing place. The study made use of primary and secondary sources to collect necessary data. The results indicate that, they are a chain of rattan resource investors, multiples sources of raw materials and local rattan workspaces. In addition, the paper established that, there are no conservation awareness and visions, no innovative technologies, insufficient basic knowledge about self-regulatory mechanism for informal trade on a sound rattan management as well as no veritable institutional support structures to strengthen the rattan sector. Therefore, imperiling this activity into a blur future given the gaps observed in the sector. Based on these challenges, the study has proposed pertinent concerns, which have some supportive regimented policies to awareness, sustainable conservation, production and trading trends management for livelihood of the rattan dealers in Bamenda town and beyond.

**Keywords:** *Rattan resource; conservation; management; stakeholders; Livelihood; Bamenda.*

## 1. INTRODUCTION

Worldwide, hundreds of millions of people trade in or use rattan<sup>1</sup> for purposes ranging from furniture to farming activities. Rattan resources comprise of some 600 species, throughout their natural range in the Tropical forests of Asia and Africa [1]. In Africa, there are 20 species representing four genera, three of these are *Laccosperma*, *Eremospatha* and *Oncocalamus*, which are widespread in Africa [2]. The production and markets for rattan consumption in Europe, North America, Japan and other industrialized nations seem to be growing steadily. Forming the basis of a thriving export market, rattans contribute significantly to the economies of forest-based communities throughout their range. Therefore, the production, consumption, commercialisation of rattan and its products is an integral part of the livelihood strategies for many communities (rural and urban) in the world. Much is not known about rattan in Africa because very few researchers investigated its importance, whereas in S.E. Asia, many researchers have enquired on the production and commercialization patterns of rattan products. However, there are no reliable statistics on the volume and value of trade, either globally or for individual countries. Asia leads all the other regions of the world by far in the production and export of rattan products. Among the producer countries, Indonesia dominates in

the world rattan trade: it has a clear advantage over other countries with its abundant supply of wild and cultivated rattan. It is an estimate of 80 to 90 percent of the world's raw material [3].

Conversely, due to the thriving domestic and international trade, it has observed that, the rattan industry has been experiencing considerable shortages in the supply of rattan, particularly in Asia [4]. These shortages began in late 1970s and prompted the creation of plantation-based cultivated systems for rattan almost exclusively concentrated in Asia and the Indian sub-continent. In the same line, around 120,000 hectares of rattan plantations were established. This means that a greater proportion of rattan came from managed sources. Away from the Asian continent, Indigenous management systems for the rattan resources in Africa are unknown, and, throughout its range, rattan are considered an "open-access" resource; there are very few, if any there are no customary laws regulating the harvest of rattan from the wild. However, information on the geographic distribution of rattans provide a geographic perspectives of the resources thereby facilitate informed decisions to be made for the conservation and management of these extracted resources [1]. Therefore, there is a crucial need for studies of conservation supportive policies, marketing and imminent prospects of rattan to remain a sustainable treasure from nature.

<sup>1</sup> *Rattans are climbing spiny palms belonging to the Calamoideae, a large sub-family of Palm family (Palmae or Arecaceae). There are around 600 species of rattans belonging to 14 genera in the world (Dransfield 1981).*

Village-based harvesters supplied rattan to urban markets themselves. Some urban-based artisans harvest rattan themselves only for those in close

proximity to the wild resources [5]. The development of a wide network of logging roads throughout many forest areas in West and Central Africa has enabled greater access to otherwise inaccessible areas of forest. States that require the exploitation of forest products to be governed by the issue of licenses and permits, often do not adequately monitor the exploitation of these resources, nor receive the full forestry taxes related to that with Cameroon

included. In general, though, many national forestry codes still do not include the exploitation of non-timber forest products in their regulations and the over-harvesting of many commercially important products, including rattan, continues unabated and uncontrolled. Similarly, the Production-to-Consumption System (PCS) is an entire chain of activities from the production of rattan material, including the various stages of intermediate sales and processing, to the

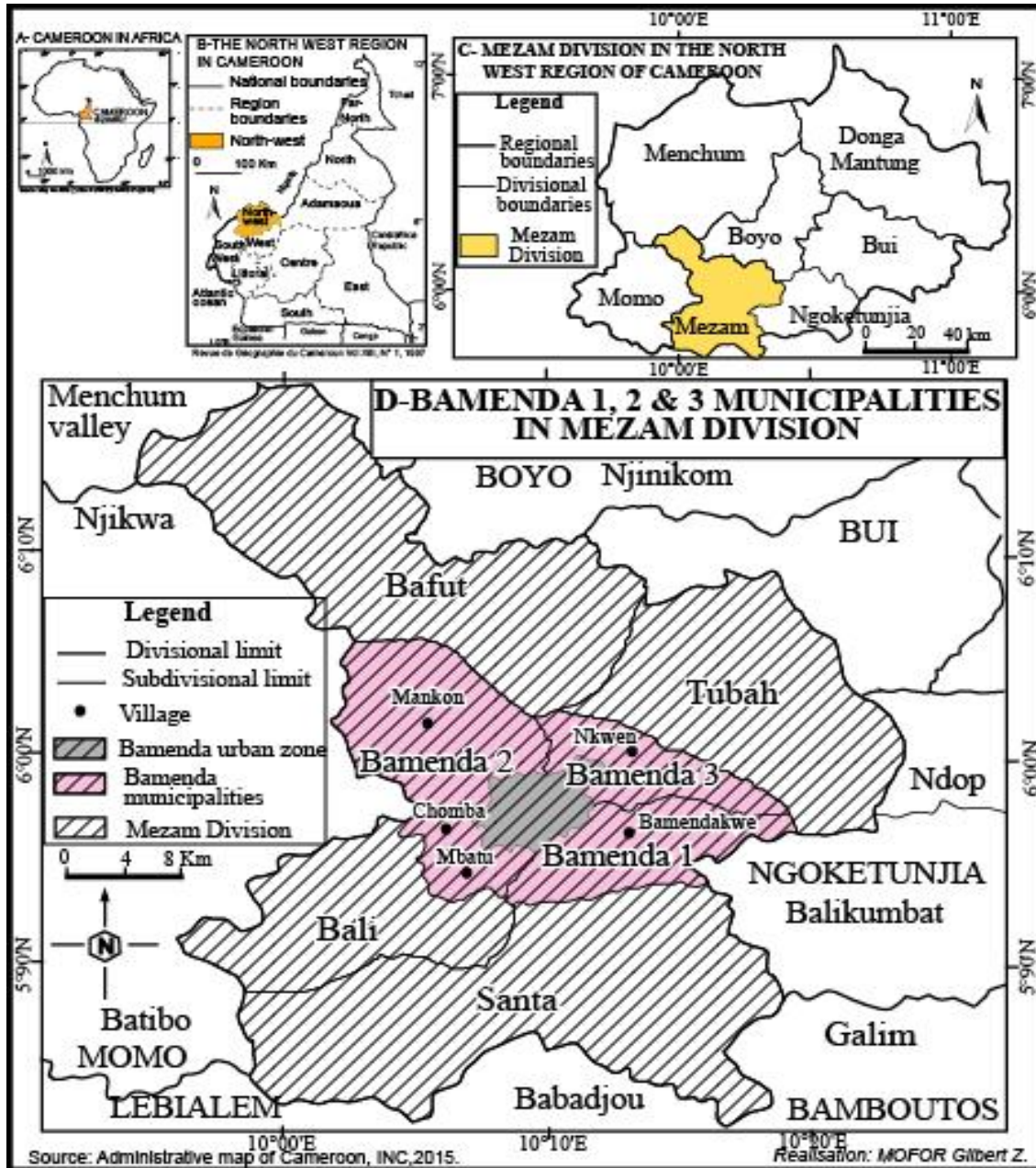


Fig. 1. The location of study area

consumer who utilizes each of the several final products [6]. The commercialization of these products have been at a subsistence level, or via internal channels within Cameroon. Given the healthy demand for cane products around the world, this represents a lost economic opportunity for the artisans and marketers of cane products within Cameroon and the North West Region in particular [3]. The production, marketing patterns and dependent population are central issues of this study in Bamenda town. The paper holds that, if vital ecological, socio-economic data on the Bamenda rattan resource becomes available, suitable strategies to ensure sustainability could be implemented thereby giving a significant potential for the rattan sources to the thriving investors livelihood.

### 1.1 The Study Area

Cameroon is located in-between Central and West Africa, at a crossroads of the Gulf of Guinea and Atlantic Ocean. Bamenda the study area include administrative headquarters of the North West Region of Cameroon and a headquarter of Mezam Division. It is situated between Latitude 5°56' and 5°58' North of the Equator and Longitude 10°09' and 10°11' East of the Greenwich Meridian. Bamenda lies at the altitude of 1430 m above sea level with a surface area of 3125 ha [7]. It shares its boundary in the West and Southwest with Mbengwi and Bali respectively. The northern part is bounded by Bafut, the South by Akum and the Northeast by Bambui. This metropolitan town is divided into three Sub Divisions: Bamenda I (Bamendankwe and Banja), Bamenda II (Mankon, Mbatu, Nsongwa and Chomba) and Bamenda III (Nkwen and Nzah). Bamenda town is situated at the major crossroads for the North West Region and links up with the Trans Africa road linking with Enefu in Nigeria. Its position has encouraged the production and commercialization of rattan products in Bamenda town.

## 2. METHOD

A reconnaissance survey was effected in the field to have an understanding of the related rattan activities. The methodology adopted in conducting this research developed out bearing in mind the variables (exploiters, processors, traders, urban authorities) and the objectives of the research. These entailed data collection through primary and secondary sources. The primary data sources were comprised of semi-structured questionnaires administered to the

Rattan investors, interview guides, and on-the-spot appraisal as were questionnaires administered for focus group discussion. The structured questionnaires were crafted in a way to yield indispensable information for this paper. The questionnaires enabled the research to obtain data on the awareness, socio-economic relevance of rattan resources and the constraints involved in the activity.

Likewise, secondary data were sourced through a number of library sources; thesis, journals, published and unpublished articles and reference books. This allowed the research to gather knowledge on the problem and to determine the lacuna, which the present research intends to fill. Data collections were assembled and analyzed to clearly understand the current rattan resource operations and steer them it towards a realistic management in Bamenda town. Fig. 1 depicts the study area.

### 2.1 Statement of the Research Problem

Rattans are one of the most important non-timber forest products of the forested region of the world. They played an integral part in indigenous subsistence strategies. Though rattan resource considered as an open-access, resource hinders the prospects for long-term sustainable management. Nevertheless, they have a proven history of being used at both the urban and rural areas levels in terms of production of numerous objects like furniture, baskets, and other important products. The unique combination of characteristics such as strength, durability, and flexibility make rattan a very good raw material for furniture and handicraft industries [4]. Transformed rattan resources have always displayed some cultural value with the potential of generating income from high quality offshoots products: either as raw cane or furniture in the export and national markets. Currently, the global rattan trade is generating 6.5 billion US dollars per year [8]. Unfortunately; most of this trade is from Indonesia and Asia whereas most African countries and Cameroon in particular are missing out potential lucrative business and conservation opportunities. More than 1000 traders are involved in the distribution of rattan products in the humid forest zones of Cameroon with some of the main traders living in the city of Bamenda [3]. One is tempted to believe that rattan resources are not regimented hence giving a leeway to unsustainable exploitation despite their prominent usages. In many instances, data on rattan resources and products are scattered and

do not provide a solid base for decision-making. It has been observed that, it has not until now been possible to design apt management strategies that might be employed to ensure the sustainable and equitable exploitation, processes, and trading of rattan resources, issues which remains the preoccupations of this paper. In spite of the fact that, rattan resources play a vital role in improving the livelihood of some people in urban areas such as Bamenda town where there is high use of rattan resources. This is a situation, which constitutes an avenue to generate groundbreaking knowledge about such activity that has management lapses. To meet the demand, the need for rattan raw materials has increased giving room to more dependents for livelihood than was the case in the previous years. In addition, the 1980s economic crisis and the structural adjustment programme in Cameroon have contributed in enhancing massive forest exploitation for both timber and NTFPs including rattan products and accelerating forest degradation [9]. The prevailing situation in Bamenda leaves the impression that, many actors are involved in the chain of rattan production and commercialization but there is no connection with the conservation philosophy of the product. More so, empirical studies hold that, the development of the rattan resource in Africa has until recently been hindered by a lack of basic knowledge about the exact species used, their ecological management and the social context of their utilization: A situation, which currently prevails in Bamenda town and its environs. It is against this backdrop that, this paper proposes to examine the treasure behind this natural resource, its conservation perspectives, and will continue to make lucid and awareness decisions about sustainable management, supportive local institutions and development of the rattan industry in Bamenda town and beyond.

### 3. RESULTS AND DISCUSSION

#### 3.1 Sources of Materials

Rattan, which is considered as an “open-access” resource,<sup>2</sup> has developed a wide network of harvesting owing to forest exploitation in West and Central Africa that has enabled greater access to inaccessible forest areas. Logging

<sup>2</sup>Open Access refers to resources that are freely available for viewing and/or use. Open Access is part of a continuum ranging from completely closed, subscription/purchase only access to completely open, no barrier

companies and trucks are often responsible for the transport of harvested rattan [10]. Nevertheless, there are many areas, which received rattan raw materials other than logging forest areas like Bamenda town, which is the focus of our study. To meet the demand for rattan raw materials in Bamenda, supply has been extended to remote parts of Cameroon, because they are found in mainly forest areas in the North West region as indicated in Fig. 2. Rattan, which falls on “open-access” resources, are access through direct harvest, bought, and bartered by dealers of raw cane for transformation into house furniture or inner design of dwellings. The findings indicate that direct harvest method constitutes the major source of the raw material.

Fig. 2 depicts that raw materials originate from a wide-range of geographical areas. These areas in the North West region include; Bafut, Ndop, Santa, Fundong, Mbengwi, Oku, and Batibo forest zones. Other sources out of the North West Region include Mamfe, Babadjou and Littoral areas.

The above map also displays feeder production towns of rattan resources into Bamenda town, which finds itself transformed into the market space. Fig. 3 similarly indicates the frequency and forest ranges where the rattan raw materials are sourced for use in Bamenda town.

The raw rattan materials used in Bamenda town come from thick, secondary and swampy forests areas. Among the sources, thick forest areas constitute the treasure environment for the extraction of the raw materials. It is established from the field that, owing to the fact that little restrictions are meted out on the harvest trend, consequently, they are unnecessarily exploited and consumed wastefully giving rise to the conservation concern.

As an “open-access” resource, this study discloses that there are virtually little customary laws regulating the harvest of rattan from the wild which thus also place the resources on unsustainable exploitation. As a whole, there are about 600 species of rattans belonging to 14 genera [11]. Out of the 600 species found worldwide, 18 species are in Cameroon forest areas. In Bamenda, there exists two main types of raw materials at the disposal of the users. These types are (*Laccosperma secundiflorum* and *Eremospatha macrocarpa*): they are the large diameter cane known as (*Laccosperma secundiflorum*) and the small diameter cane

called (*Eremospatha macrocarpa*). This is affirmed by Sunderland [12]. Who indicated that Cameroon is one of the richest Countries of West and Central Africa with rattan species diversity with 18 of the 20 known African species. He

further indicated that, in Cameroon three main types are marketed: *Laccosperma secundiflorum* (large diameter cane), *Robustum* (large diameter cane) and *Eremospatha macrocarpa* (juvenile stems).

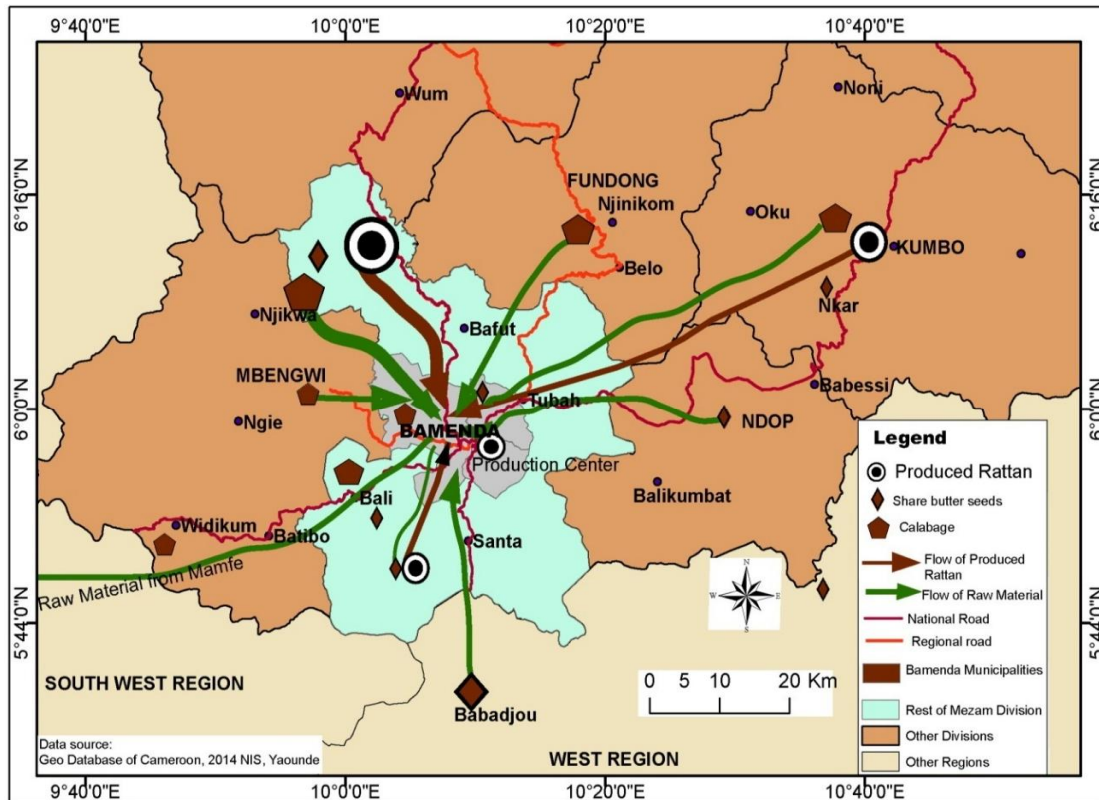


Fig. 2. Sources of rattan raw materials and products into Bamenda town

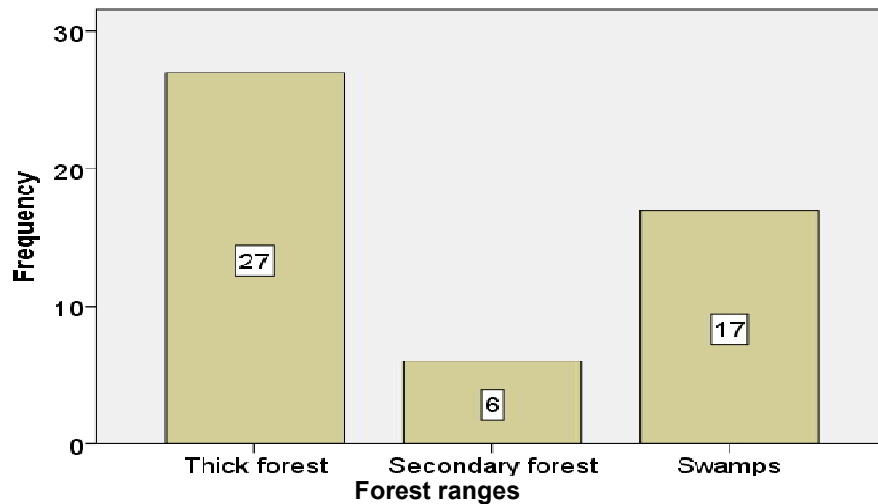


Fig. 3. Forest ranges endowed with rattan raw materials

Source: Field world 2019

Owing to the level of forest resources stock, particularly rattan use drift, tomorrow's availability would continue to be plagued if nothing is done to address the situation. Considering the productivity and optimality of their use, it is essential to take good account not only on use patterns at moment but also on the past over space and time in order to visualize the future.

### 3.2 Rattan Products

A wide range of rattan products, users and market chains characterized the rattan sector. A sector, which is still at artisanal level in some places but their products, are in sizes and designs, displayed in different avenues. Rattan is of great economic importance in handicraft and furniture making because of its richness in fiber, with suitable toughness and easiness of handling for processing [4]. Rattan fabrication mainly occurs in two stages, which are cane extraction and final product fabrication. The two stages of fabrication differ in different countries and at different scale [3]. Small craft industries and individuals for significant supplement incomes fabricate rattan products in most Cameroon towns including Bamenda. A wide range of furniture are derive from rattan raw material (cane) in Bamenda town like in other corners of Cameroon. In Bamenda, the artisans specialised in producing and selling a range of rattan products for house furniture, outdoor furniture, office and inner homes designs but it is rather unfortunate there is no sense of teams' coordination.

The social-demographic traits of the actors illustrates more or less individual manufacturer workshops in Bamenda town. Unlike in Ghana according to [13]. Some cottage industries' rattan processors specialised in specific products and cooperative trends are observed, a case, which is not found in Bamenda town despite its demand. In most Asian countries, rattan processing is at various levels of aptitude and intensity: As a cottage enterprise, in small and medium-sized factories and by larger companies [3]. In Bamenda, the producers tend to source cane at the lowest possible prices, with little concern about supply-side sustainability.

In all, the common products manufactured in Bamenda town are house furniture, outdoor furniture, office and homes designs including chairs, tables, cupboards, beds, baskets, caps, mates, and flower jars and picture frames as indicated in Plate 1.

The above photos illustrate varied products by artificers in Bamenda town. It is worth noting that, the industry is largely operating by individuals and at most, on family bases while trade for the urban household markets remains unregulated. Owing to the muddled, size, and informality of the rattan workshop, traders and governments likely find it problematic to monitor and regulate, an issue exacerbated by the variety of uncoordinated individual producers. The fact that rattan raw materials, unlike other forestry resources, can be reaped from forests areas, regardless of size, and species, indicates that the range of potential source areas is vast. This makes it even harder to control sourcing given the disarray state of affair. Therefore, it defaces the sustainability of the whole activity. Perhaps organizing themselves into production groups will certainly maximise profit and give a leeway to information dissemination about rattan resources.

The characteristic of the artistes' age array portrays ages ranging from 15 to 45 and above as indicated in Table 1.

**Table 1. Age distribution of the dealers**

Age group	Frequency	Percent
15-25	7	14
25-35	24	52
35-45	16	28
45 and above	3	6
<b>Total</b>	<b>50</b>	<b>100</b>

*Source: Field data 2019*

It is observed that the actors involved in the Production-to-Consumption System (PCS) principally belong to adults and the young age group. From Table 1, the age group 25-35 constitutes the highest with 52%. Many artisans' hold that it is more suited to this group because they are more energetic. To corroborate with, Sunderland [14]. on this age range's economic profile of rattan trade in Cameroon, majority of the rattan dealers in the study area ages range between 25-35years while the age range 50 and above are less energetic for the activity. This age range constitutes a potential group to invest suitable strategies to ensure significant sustainability of rattan resource management.

Concerning gender inference on this activity, it is underscored that, men are extremely involved than women as indicated in Fig. 3.



**Raw material**



**Processor at workspace**



**Processor at work**



**Basket product from cane**



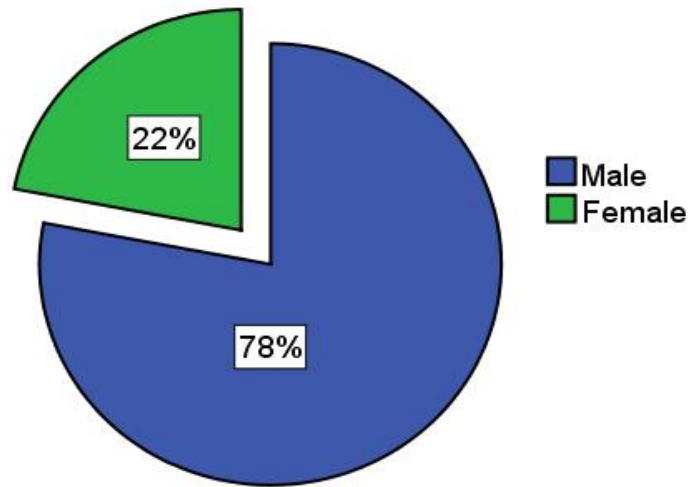
**Rattan dining table**



**Flower jars**

**Plate 1. Samples of rattan products sold in Bamenda town**





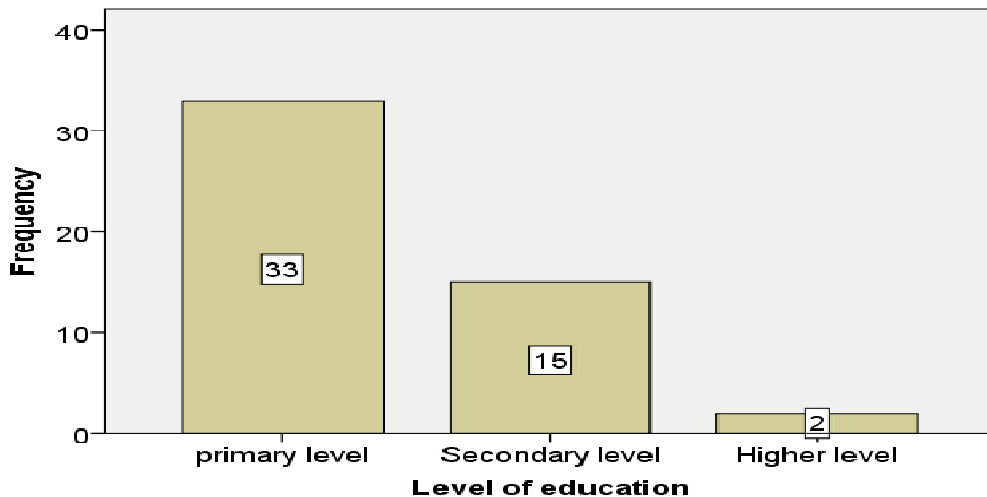
**Fig. 3. Gender implications in rattan activity in Bamendan town**  
 Source: Fieldwork 2019

Men undertake a long chain of activities from harvesting, transporting and production of a wide range of products including trading. While women opportunistically attempt to collect raw materials in most shallow areas, involve in producing minor products and negligible marketing. However, women are known to be exclusive processors and weavers in a labour-intensive production process; they come in more often to sell finished products.

materials from one-end and market opportunities during festive moments in the other end. Rattan is not only important as a commodity for the furniture and handicraft industries, but it also has other traditional uses. It is reported that, from time in memorial; rattans were used for raft making, house construction, baskets and poles for carrying goods; and rattan leaves are used extensively as a thatching material [13].

It is also inferred from the field that, production and trade processes highly obeyed seasonal operational attitudes; it occurs mostly in the dry season thanks to the accessibility of raw

The educational attainment of the actors has influenced in a way much about the operations within the management of rattan resources. As indicated in Fig. 4, their educational levels ranged from primary to high schools.



**Fig 4. Educational levels of the Actors**  
 Source: Field data 2019

From Fig. 4, it can clearly be observed that, 33 of them attained primary education, 15 attained secondary education while 2 reached higher education. This goes to affirm that 75% of the dealers in Cameroon are known to have attended primary education [3]. The findings of the paper hold that, the low level of education of the dealers owe much to its unsustainable practices at all levels. This gives the impression that, the more educated the artisans are in rattan activities', the more they are liable to adapt to changes and innovations.

### 3.3 Marketed Rattan Objects and Avenues in Bamenda Town

A wide range of rattan objects made in Bamenda are sold in Bamenda town and beyond. Most manufacturers have no proper workshops and consequently store their raw rattan materials, and finished products in their houses. We observed a single group involved in harvesting and processing rattan products known as Cane and Bamboo Workers Common Initiative Group (CABCIG). This group does not really enjoy groups' welfares as elsewhere; this goes to

confirm that the sector in the study area needs to set up its management tactics to balance the ecological and human livelihood needs.

In order to spatialize the products selling spots, Fig. 5 depicts the main trading spaces of these products in Bamenda town.

Most customers come from Bamenda environs while others come from the West Region of Cameroon. Prices vary and often depend largely on the design, size and quality of the products.

Concerning market prices, it depends on the size, design and the quality of the products. However, products that are more sophisticated are more expensive than others. For instance, chairs and cupboards are more expensive than rattle sieves and caps. This is because refined and well-designed products are more profitable and some are manufactured on order. This is also witnessed in Yaounde rattan products markets according to [3]. From a quantitative viewpoint, common products are highly sold; but receive less profit compared to sophisticated ones. Fig. 6 indicates the cataloging of profit in terms of different products in the study area.

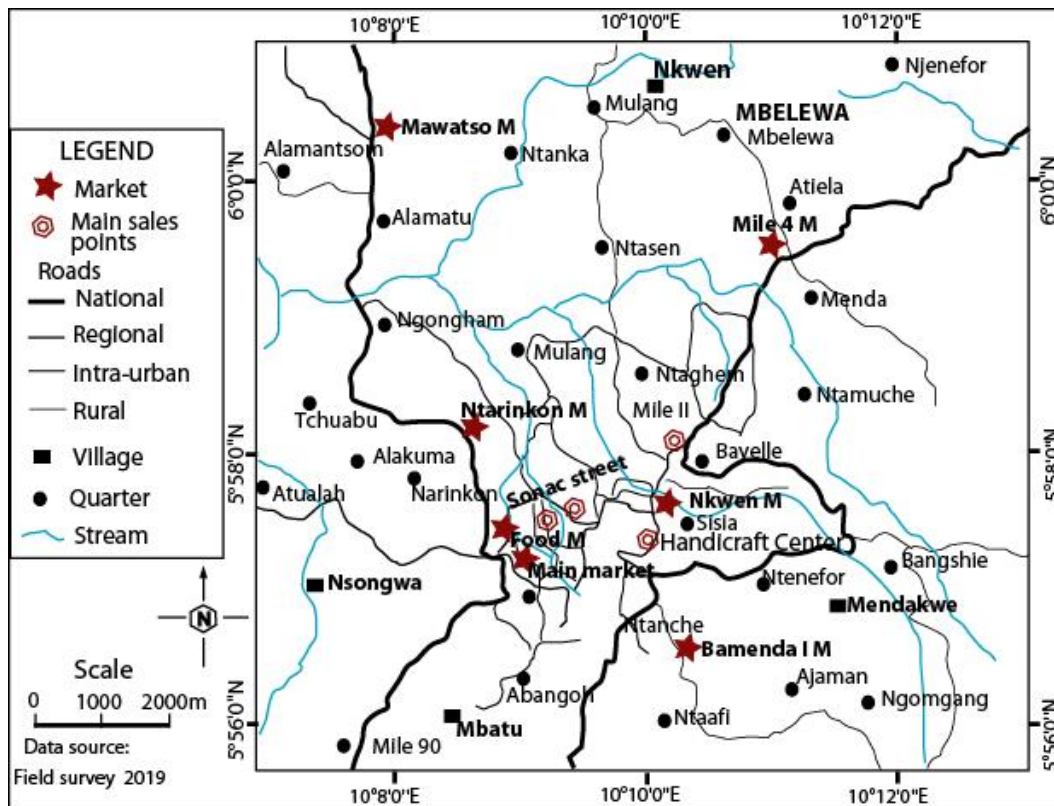
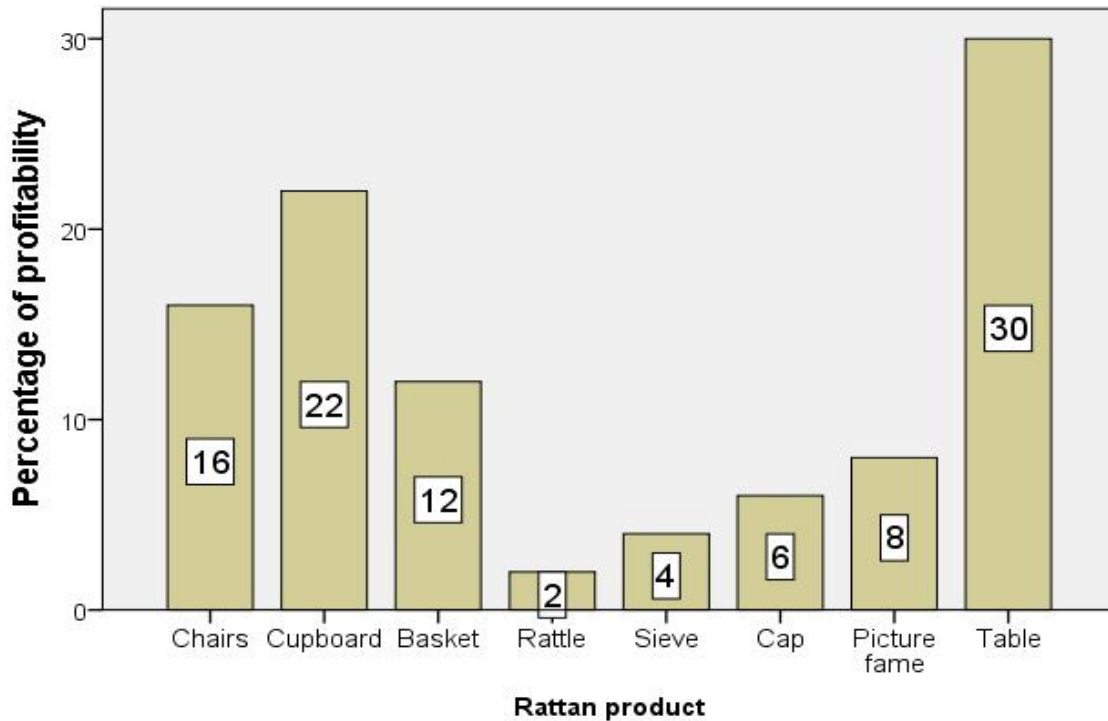


Fig. 5. Sales points of rattan products in Bamenda town



**Fig. 6. Classification of rattan products in terms of profitability**

Source: Field data 2019

Fig. 6 shows that, objects like tables, cupboards and chairs are more profitable than others, while rattle is the least profitable object list. The commercialization of rattan products in Bamenda is a non-negligible source of supplementary income to the dealers. Field facts revealed that a substantial part of households income is gathered from engaging in its trade though it remains highly unorganized; a worry which this paper intends to attempt to solve. Table 2 represents the estimate of monthly income of dealers throughout peak sale periods.

From Table 2, 10% of the dealers earned less than 5,000Fcfa, 50% earn a monthly income between 5,000-100,000Fcfa while 30% received a monthly income above 100,000Fcfa. This shows that the production and trade in rattan products in Bemenda town is a lucrative activity

given that, 50% of those involved declared having earned 50,000-100,000Fcfa monthly during peak sale periods. In Equatorial Guinea, one of the most important non-timber forest products that play a key role in economic wellbeing of the communities is traded rattan cane [15].

However, the sale of processed rattan goods is highly dependent upon the season and the time of the year. During Christmas, Easters and other religious holidays, more products are bought than during ordinary days: Sales are larger in the dry seasons than the wet seasons because during the latter access to raw materials becomes difficult and thus makes it expensive and vice versa. Table 3 presents a periodicity of production and trade in rattan products in Bamenda Town.

**Table 2. Estimate of monthly income during highest sale periods**

Income (Fcfa)	Frequency	Percentage
< 5,000	10	20
5,000-100,000	25	50
100,000 >	15	30
<b>Total</b>	<b>50</b>	<b>100</b>

Source: Field data 2019

**Table 3. Periodicity of production and trading of rattan products in Bamenda town**

Period	Month	Frequency	Percentage
Dry season	October-June	31	62
Rainy season	June-September	5	10
All year round	April-September	14	28

Source: Field data 2019

From 3 above, it is observe that the periodicity of the production and trade in rattan products in Bamenda town vary with seasons. It is established from the field that rattan products are more abundant during the dry seasons owing to the fact, that during the dry season, raw materials are easily accessible for harvesters and thus are less expensive. Contrarily, during the rainy season, not all products are produced due to the poor state of roads, difficulty to access the forest for raw materials. Most often, this creates a scarcity of raw materials in the market and makes the affordability of materials more expensive for producers to buy. That is why; the products during rainy seasons are mostly small sizes, which require less quantity if raw materials (rattle, cap, basket, sieve and picture frame). This goes to corroborate with the case of rattan product markets in Ashanti and Western regions of Ghana where product availability depends on seasons [13]. In all, sellers routinely operate under either informal or formal business arrangements with high levels of individual basis. A scenario, which plagued the activity into a wanting spiral which needs effective organization for the benefit of stakeholders.

### 3.4 Perspectives

Given that, nothing indicates appropriate design management strategies in Bamenda town to ensure bridging a gap between equitable exploitation and consumption of rattan resources, sustainable perspective measures are compelling. Owing to the fact that, rattan is of economic, socio-cultural and ecological importance for many people in Bamenda town and beyond, necessary steps will ensure its sustainability. The paper therefore suggests the following perspectives;

- ✓ Establish institutional support structures to strengthen the rattan sector, including financing schemes for small and medium-sized enterprises related to the activities,
- ✓ Awareness raising campaigns on the impact of insufficient knowledge of rattan conservation issues in general and of the conservation status of commercial rattan

species in particular by authority of Bamenda town,

- ✓ Regular steps should be taken in view of conducting surveys of available stock, hot spot areas, exploiters and current statistics of exploitation,
- ✓ Strengthening of possible extension support to local collector organizations on methods for reducing post-harvest losses, improving storage, and others are necessary,
- ✓ Developing means of protecting rattan products with environmentally acceptable preservatives, since rattan is liable to biological deterioration,
- ✓ Sustainable management of the resource is crucial by creating avenues that encourage the development of rattan plantations by the exploiters. This can regulate or address the problems of uncontrolled harvesting,
- ✓ Establishing of comprehensive training and support schemes to local specialists in rattan producing sectors, management and processing, complemented with twinning arrangements among relevant institutions in and around the region,
- ✓ Technology and trade approaches highly need to be innovative in order to accompany, actors and institutions networking establishment,
- ✓ There is an urgent need to develop a strategy for scientific management to conserve this valuable forest resource. This will offer a groundwork for decision making for both researchers and development organizations.

### 4. CONCLUSION

Given rattan's resource socio-cultural, economic, and ecological importance to hundreds of millions of people in the developing world, and Bamenda in particular, but taking into cognizance of the absence of resource assessment and conservation moves until recently have hindered appropriate knowledge about the ecological strands, exact species used, and innovations in the social and economic context. Consequently,

this paper holds that, suitable strategies to ensure sustainability could be implemented thereby giving a significant potential for the rattan sources to the thriving investors livelihood. This is with the aim to benefit appropriate harvesting, processing, transformation technologies and trading drives of rattan resources, which are suitable for the local and external scales. By doing so, interrelated refurbishing measures bridge the gap between conservation awareness and the continuous dependent of investors for livelihoods in Bamenda town.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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