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Contribution of non-timber forest products to livelihood of rural communities in Kumbungu District of Northern Ghana

ABUKARI AMMAL♥, MUMUNI MARIAM
Department of Forestry and Forest Resources Management, Faculty of Natural Resources and Environment, University for Development Studies. Tamale, Ghana, ♥email: aammal@uds.edu.gh

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Abstract. *Ammal A, Mariam M. 2020. Contribution of non-timber forest products to livelihood of rural communities in Kumbungu District of Northern Ghana. Asian J For 4: 10-14.* Non-Timber Forest Products (NTFPs) play an important role to fulfill the livelihood of rural communities. This survey investigated the contribution NTFPs to the livelihood of rural communities in the Kumbungu District of Ghana. Data were collected using structured questionnaires and verbal interviews to obtain information from sampled members of the communities' in the Kumbungu District of Northern Ghana. Personal interviews and direct observation were carried out and a total of 200 structured questionnaires were administered randomly to respondents in 5 selected communities in Kumbungu District namely Cheyohi, Kpalchi, Kokpeng, Zuolanyili and Garizew. Data were analyzed using descriptive statistics (tables, charts, and graphs). The findings indicated that NTFPs were abundant in the study area and were found in all the forest land areas within the communities. NTFPs collection for utilization was usually carried out throughout the year. The respondents in the five communities collected and used the NTFPs for preparation of food for the family and other purposes. The number of respondents involved in the collection of NTFPs was highest in Kokpeng community (21.3%), while only 18.5% of respondents were involved in the Garizew community. The chi-square test revealed that there were highly significant differences (P>0.05) between the number of respondents involved in the collection and non-collection of NTFPs in the district. The lowest income generated from NTFPs ranged between 1-25 (GHC) Ghana cedis per week whilst the highest income was 65+ GHC per week. A proportion of 12.5% of respondents in Zuolanyili had income ranging between 1-25 GHC per week and 10% of respondents had income above 65 GHC per week. A proportion of 47.5% and 30% of respondents' income ranged between 25-45 and 45-65 GHC per week respectively in the Zuolanyili community. Respondents in the Kokpeng community had the highest proportion of respondents (30%) who obtained income above 65 GHC per week whilst Garizew had the lowest proportion of respondents (5%) who obtained income above 65 GHC per week.

Keywords: Food, livelihood, Non-Timber Forest Products, rural community, occupation, poverty

INTRODUCTION

Non-timber forest products (NTFPs) offer livelihood to a larger proportion of the global population, particularly the rural communities in terms of their needs such as food, medicine, employment and cash incomes through trade (Endamana et al. 2016; Pandey et al. 2016; Suleiman et al. 2017). Additionally, NTFPs are vital sources for rural communities especially during times of shortages to mitigate poverty and might lead to socio-economic progress of rural communities (Ojea et al. 2016; Suleiman et al. 2017). NTFPs serve as safety net for rural people payable to their poor financial situations (Alex et al., 2016), and NTFP gathering, use, and trade are similarly significant livelihood and cost-effective activities of rural communities (Raj et al. 2018).

Monetary approximations of USD 90 billion are set for NTFPs per annum globally and almost one-third is consumed in the local economy minus inflows into the market (Raj et al., 2018). The contribution of NTFPs to rural households' income is important in many countries worldwide. For instance, Shackleton et al. (2015) stated that family earnings from NTFPs are occasionally equivalent to or more than the school teachers' least remunerations in Central and West Africa. They additionally stated that traders of NTFPs in the Democratic Republic of Congo received between USD 16 and 160 each week whereas producers made approximately 50-75% of the amount per week. Rural families in Nigeria can get up to 80% of their earnings from the trade of NTFPs (Jimoh et al. 2013). Also, it was observed that over 70% of all families in the country largely depended on fuelwood as one of the key sources of energy with an estimated consumption of 27.5 million kg/day (Verma and Paul 2016).

The association between the rural poor and the high dependence on natural resources has been recognized (Kranjac-Berisavljevic and Gandaa 2002). That is the case with Ghana. The majority of Ghana population live in rural areas with 54% of the total Ghanaians are subsistence farmers. Rural poverty in the country is strongly associated with the available natural resources which are influenced by the ecological zones where the communities are located. In general, the frequency and the profundity of poverty in rural communities are superior in savannah compared to any other ecological zones in Ghana, although poverty also occurs in the forest zone and coastal belts. In the Northern parts of Ghana, gender plays a vital role in the measurement of poverty which indicates differences in the earnings of men and women. The women accept an uneven

portion of the liability of being poor and indulge in devoting unlimited time to household initiatives, yet they also support and educate children in executing any additional household tasks (Kranjac-Berisavljevic and Gandaa 2002).

Local people have indigenous knowledge in managing forest resources to obtain food as well as to generate other produce. They occasionally utilize these sources for their livelihood option. In Ghana, there is consequently the need to gather information on the contribution of NTFPs to rural people. Available data regarding the dependence of rural people on the utilization of NTFPs will serve as baseline information for the development of programs to improve rural lives. This study aimed to provide detailed data on the contribution NTFPs that can possibly improve poverty in the rural communities of Kumbungu District of northern Ghana. The purpose of this study is to determine the number of rural folks involved in the utilization of NTFPs in the study area, determine the kinds of NTFPs used and determine the contribution of NTFPs species to the livelihood of Kumbungu District. The results of this study are expected to be beneficial for academics, farmers, industrialists and traders.

MATERIALS AND METHODS

Study period and area

The study was conducted in a period of three months between February and April 2019 in Kumbungu District (Figure 1). It is one of the districts located in northern Ghana and it shares borders to the north with Mamprugu District, Tolon, and North Gonja districts to the west, Sanarigu district to the south and Savelugu/Nanton Municipal to the east. The people are predominantly Dagombas who are mainly peasant farmers. The population is approximately 39,341 (Musah et al. 2013).

Data collection methods

Data were collected using structured questionnaires and verbal interviews to obtain information from sampled members of the communities' in the Kumbungu District of northern Ghana. Personal interviews and direct observation were carried out. A total of 200 structured questionnaires were administered randomly to respondents in 5 selected communities in Kumbungu District namely Cheyohi, Kpalchi, Kokpeng, Zuolanyili, and Garizew, resulting in 40 questionnaires were administered in each community and this was used to prompt information on the uses of NTFPs in the study area.

Data analysis

Descriptive statistics were used to analyze the data obtained. Tables, percentages and charts were used to define variables of respondents to summarize the contribution of NTFPs to households' livelihood.

Figure 1. Map showing the location of the study area in Kumbungu District, northern Ghana

RESULTS AND DISCUSSIONS

The results showed that NTFPs were abundantly available within the communities in the study area. The gathering of NTFPs was regularly carried-out all year round. The collection of NTFPs involved Male (44.5%) and females (56.5%). The respondents ages were grouped into young (10-20 years), middle-aged (21-30 years), working-age (31-40 years) and elderly (41 years and above). The middle-age (21-30 years) showed a higher percentage with 44.6%. The overall mean age of respondents was 21 - 30 years.

Education

The education of respondents was categorized into two groups namely educated and not-educated. Majority of the respondents were educated up to tertiary school level. Only a few respondents were found to be not-educated, who did not have the opportunity of going to school and group includes the elderly people. Cheyohi had the highest percentage of educated respondents (22.2%), while Kokpeng (17.4%) had the least. Likewise, Kokpeng had the highest percentage of not educated respondents of 26.9%, while Cheyohi (14.3%) had the least percentage of not-educated respondents. The chi-square test showed that there were significant differences between educated and not educated respondents among the communities in the Kumbungu District (Table 2).

Occupation

Respondent's occupation was categorized into three groups namely, farming, trading, and students. Farming was the major occupation of the communities. From the response, majority of the occupation in the communities were trading (40%) and farming (40%) while students (20%) were the lowest.

NTFPs collection

Table 3 shows the proportion of respondents who collecting of NTFPs in the district. The result shows that the number of households involved in the collection of NTFPs was highest in Kokpeng community with 21.3% of the respondents being involved, whereas for Garizew community only 18.5% were involved, making it the lowest. The total number of respondents involved in NTFPs collection in the five communities was (99.9%). The chi-square test revealed that there were significant differences between the number of respondents involved in the assembled and not-assembled NTFPs in the Kumbungu District.

Income per week from NTFPs

Table 4 demonstrates the income generated from the sale of NTFPs in the five communities of the Kumbungu District. From the survey, the communities in the district received some money from the collection of NTFPs, for example, honey, construction materials, fodder, bush meat, living animals, medicinal plants, wild food, and fuelwood. The lowest income generated from NTFPs ranged between 1-25 (GHC) Ghana cedis per week whilst the highest income was 65+ GHC per week. A proportion of 12.5% of respondents in Zuolanyili had income ranging between 1-25 GHC per week and 10% of respondents had income above 65 GHC per week. A proportion of 47.5% and 30% of respondents' income ranged between 25-45 and 45-65 GHC per week respectively in the Zuolanyili community. Respondents in the Kokpeng community had the highest proportion of respondents (30%) who obtained income above 65 GHC per week whilst Garizew had the lowest proportion of respondents (5%) who obtained income above 65 GHC per week. This finding is in line with Olsen and Larsen (2003) report that in some rural hilly areas of Nepal, NTFPs contribute up to 50% of total annual family incomes. However, the number of NTFPs collected is high in the communities of the district but only few NTFPs collected are being sold.

The rural folks in communities are extremely reliant on a range of NTFPs for their subsistence needs which also contributes to their annual income (Fajobi and Fingesi, 2018; Olsen and Larsen 2003). Consequently, NTFPs generate little income for the members of the community, however, overutilization of these resources will reduce the forest and land resources in the area. As result of food deficiency by rural folks has resulted in pressure on NTFPs collection to make financial gains for their livelihood. In addition, traders reassure primary collectors to collect larger amounts, predominantly NTFPs that have higher market demand and this depletes the availability of NTFPs species day-by-day.

Table 1. Age of respondent in the Kumbungu District, northern Ghana

Age of respondent	Respondents percentages
10-21	32.4
21-30	44.6
31-40	15.5
41+	7.5
Total	100

Source: Field Survey, 2019

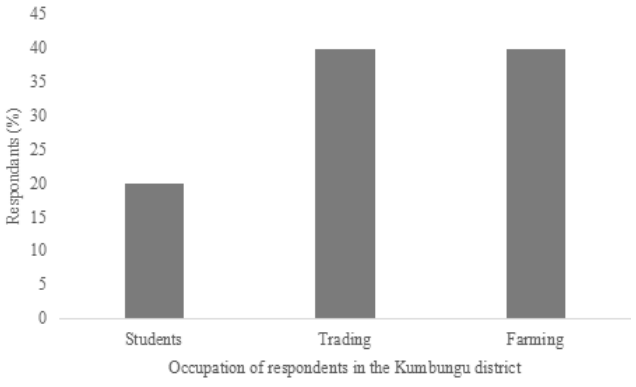

Figure 2. Occupation of respondents (%) in the Kumbungu District, northern Ghana

Table 2. Education of respondents Kumbungu District, northern Ghana

Communities	Educated	Not-educated	χ^2	df	P
Cheyohi	32 (22.2%)	8 (14.3%)	7.4532	4	(p> 0.05)
Kpalchi	28 (19.4%)	12 (21.4%)			
Kokpeng	25 (17.4%)	15 (26.9%)			
Zuolanyili	30 (20.8%)	10 (17.9%)			
Garizew	29 (20.1%)	11 (19.6%)			
Total	144(100%)	56 (100.%)			

Source: Field Survey, 2019 (χ2 = Chi Square; df = degrees of freedom); (N = 200)

Table 3. The proportion of respondents who collecting or not collecting NTFPs in the Kumbungu District, northern Ghana

Communities	Collecting NTFPs	Not collecting NTFPs	Total	χ^2	df	P
Cheyohi	36 (20.2%)	4 (18.2%)	40	7.4532	4	(p > 0.05)
Kpalchi	34 (19.1%)	6 (27.3%)	40			
Kokpeng	38 (21.3%)	2 (9.1%)	40			
Zuolanyili	37 (20.8%)	3 (13.6%)	40			
Garizew	33 (18.5%)	7 (31.8%)	40			
Total	178 (99.9%)	22 (100%)	200			

Table 4. Income obtained per week from NTFPs in the rural communities of Kumbungu District, northern Ghana

Community	Number of respondents	NTFPs	Income range per week (GHC)			
			1-25 GHC	25-45 GHC	45-65 GHC	65+ GHC
Cheyohi	40	Fodder, bush meat, honey, medicinal plants, construction materials, fuelwood	12 (30%)	9 (22.5%)	15 (37.5%)	4 (10%)
Kpalchi	40	Living animals, wild food, honey, fodder, fuelwood	8 (20%)	16 (40%)	7 (17.5%)	9 (22.5%)
Kokpeng	40	Construction materials, honey, medicinal plants, fodder	11 (27.5%)	15 (37.5%)	2 (5%)	12 (30%)
Zuolanyili	40	Honey, bush meat, wild food, fuelwood, fodder	5 (12.5%)	19 (47.5%)	12 (30%)	4 (10%)
Garizew	40	Construction materials, honey, fodder, bush meat, wild food	6 (15%)	25 (62.5%)	7 (17.5%)	2 (5%)
Total	200					

Economically, the vital parts of NTFPs collected by rural communities were sold either as raw or as processed form. Some of the NTFPs sold were in the form of twigs, shoot, fruit, seed, and leaves which were sold to vendors in the form of bundles, bunches, single pieces, or weighed. The center of the economic significance of NTFPs is that they are found in forest areas inhabited by indigenous communities (Verma and Paul 2016). NTFPs collection is an imperative source of income and employment for forest dwellers/indigenous communities and rural poor (Verma and Paul 2016). There is a need to educate rural communities on the sustainable collection of economically valuable NTFPs species because there is an opportunity for income and employment generation through cultivation of economically valuable NTFPs species.

In conclusion, to supplement the low agricultural production in the rural areas of Ghana, the rural people of the Kumbungu District utilized NTFPs as an effective means to enhance the economic benefits and to help in improving livelihood, household food security, and nutrition. The study revealed that the utilization of NTFPs by the communities helped to bring development to the communities. It was also recorded that the utilization helped to promote the image of the communities as it was noticed that companies, as well as individuals from nearby towns and cities, come to purchase these NTFPs from these communities, especially shea butter oil. The study also showed that the utilization of these NTFPs also boosted the use of herbal medication among humans both in the local communities and urban areas. Therefore, awareness campaigns on the conservation of habitats of NTFPs species, both edible, medicinal plants, and tradable NTFPs species, should be conducted at the village level. At the same time, a local regulatory system should be launched which will regulate the harvesting of NTFPs species from government forests and other lands. This could also lessen the dependence of households on consumption of NTFPs; thereby helping to preserve it for future purposes.

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