Natural Forest Products for Rural Development and Poverty Alleviation in Sudan

University of Khartoum

Faculty of Forestry

Hanadi Mohamed Shawgi Gamal[1], Asma Elyas Mohamed Elzubair[2], Zeinab Ahmed Abdel Hameed[1]

[1]University of Khartoum, Faculty of Forestry, Department of Forest Products and Industries, Khartoum, Sudan
[2]University of Khartoum, Faculty of Forestry, Department of Forest Management, Khartoum, Sudan

Introduction

Sudan is a country with highly diverse ecological zones. The rainfall varies from zero in the northern part to more than 1,200 mm in the southwestern part of the country resulting in great variation in vegetation cover. Therefore, Sudan has diverse forest products, including wood and non-wood forest products.

The vast majority of Sudan forests are situated in poor rural areas, where great number of population live around the forests and considered as forest-dependent for livelihood, wood energy and on round timber for buildings. For instance, in Sinnar State most of the population live in the rural areas, depending upon forest products in their livelihoods.

However, no information is available about the contribution of natural forests in provision of forest products for the rural population and their roles in poverty alleviation. Therefore, this study attempted to provide information on the contribution of forest products into income of the rural livelihood and economic development in Nowara natural forest, Sinnar State, Sudan.

Methodology
Study area

The study was conducted in Nowara natural forest which is located in the southwestern part of Sinnar State, Sudan. Figure 1 shows the map of The study area.
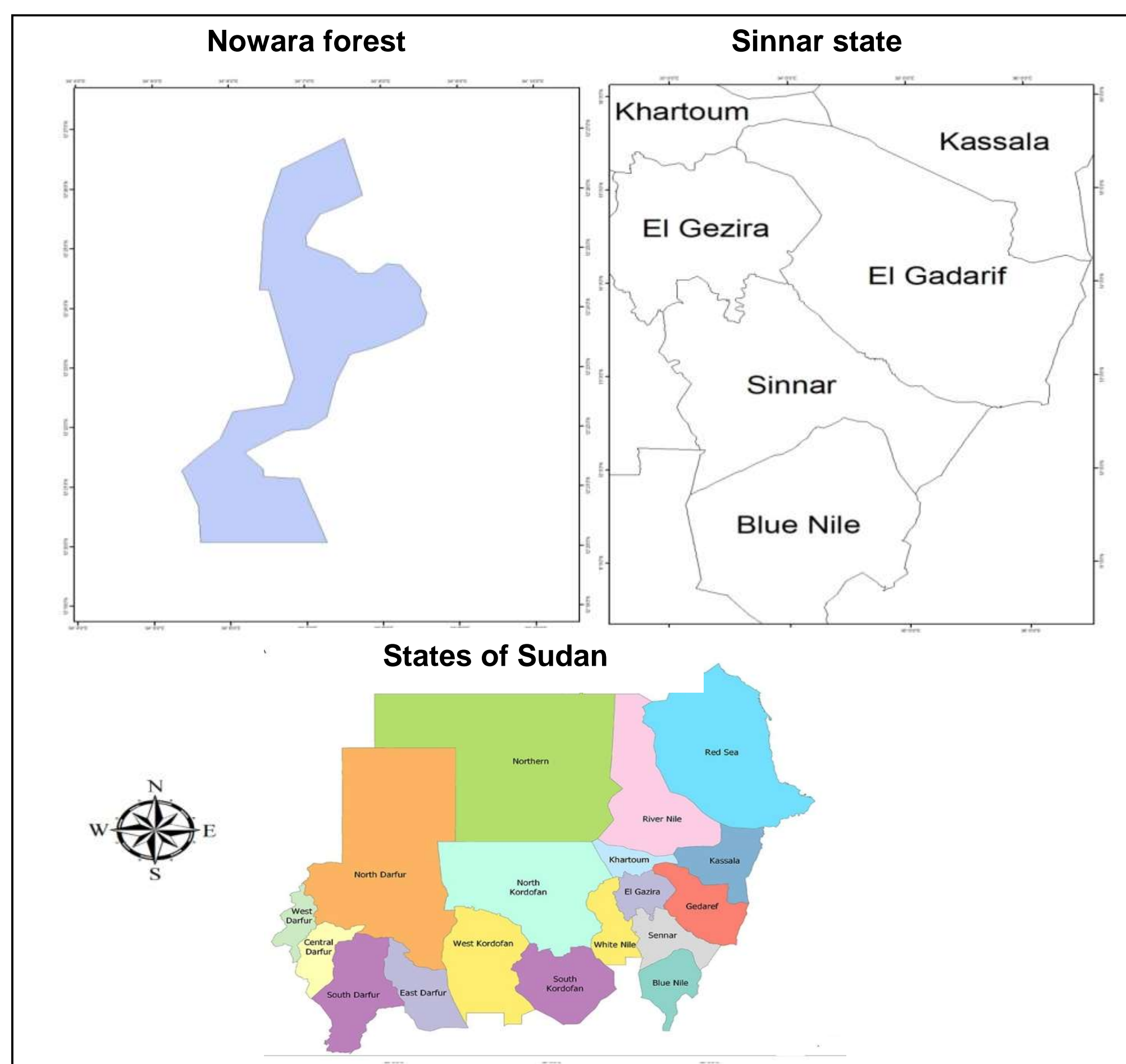

Figure 1: The Study area map

Data collection

Data collection method was relied on a combination of primary and secondary sources of data. The secondary data was gathered from various sources that include archives, records, annual reports and published papers. While, primary data was collected using structured questionnaire headed of household survey which conducted in February - March 2022.

The sampling strategy was relied on probability techniques for data collection from local community members using simple random sampling techniques. The sample size of this study was 50 respondents selected without consideration of age and gender in the study area.

Data analysis

For this research, both qualitative and quantitative data were analyzed using Statistical Package for Social Sciences Software (SPSS versions 25), where descriptive analyses in forms of percentages and mean were conducted. Analysis of variance (ANOVA) also was applied to identify the significant variations.

Results

The study results approved that Nowara natural forest offers many products and services to the rural population who live inside or around the forest. The provided products include wood and non-wood forest products (NWFPs).
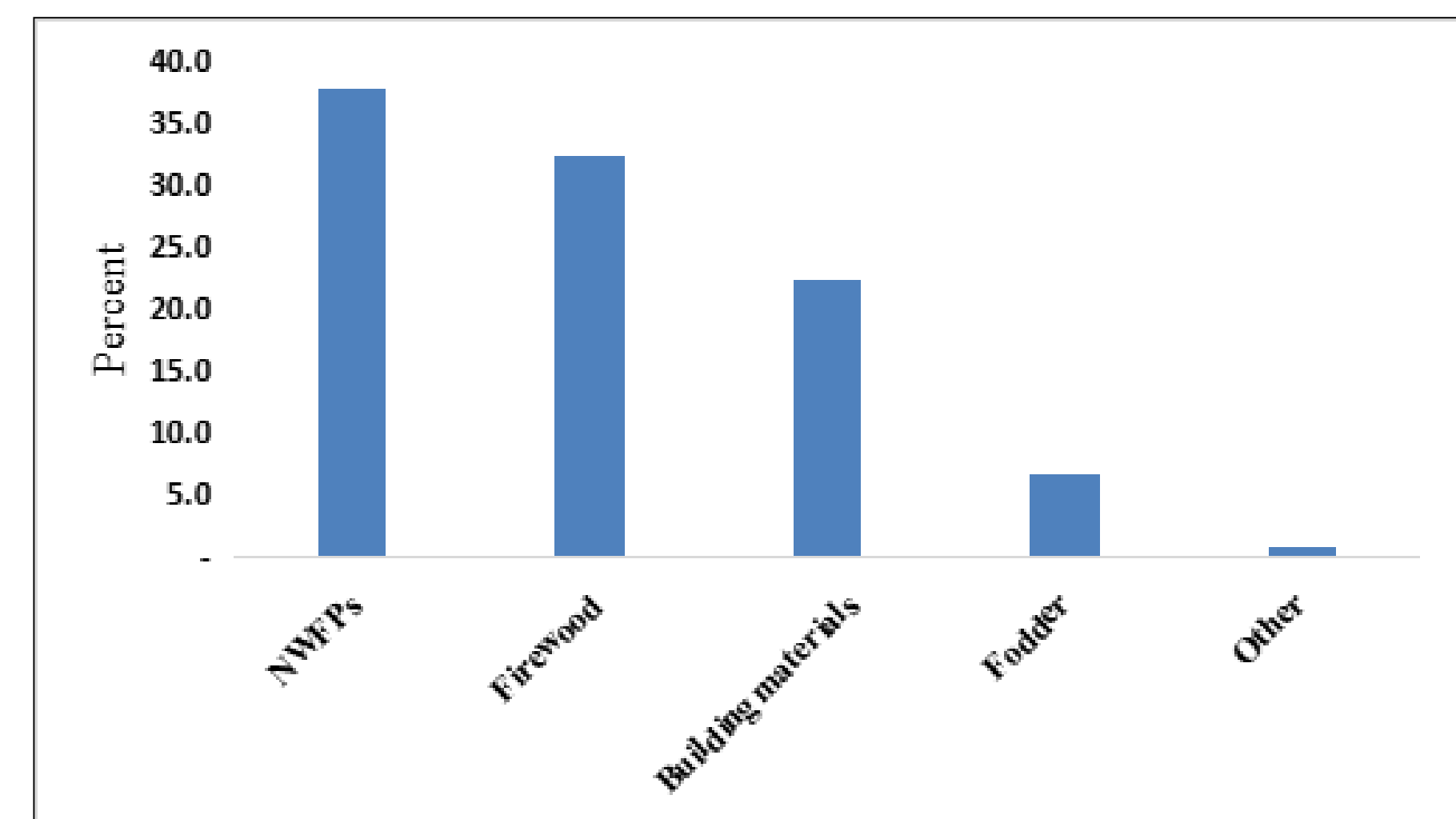

Figure 2: Forests products and services in the study area

According to the results illustrated in Figure 2, the non-wood forest products represent the highest percentage of the total products provided by Nowara forest to the rural population. Followed by firewood and building materials, respectively.
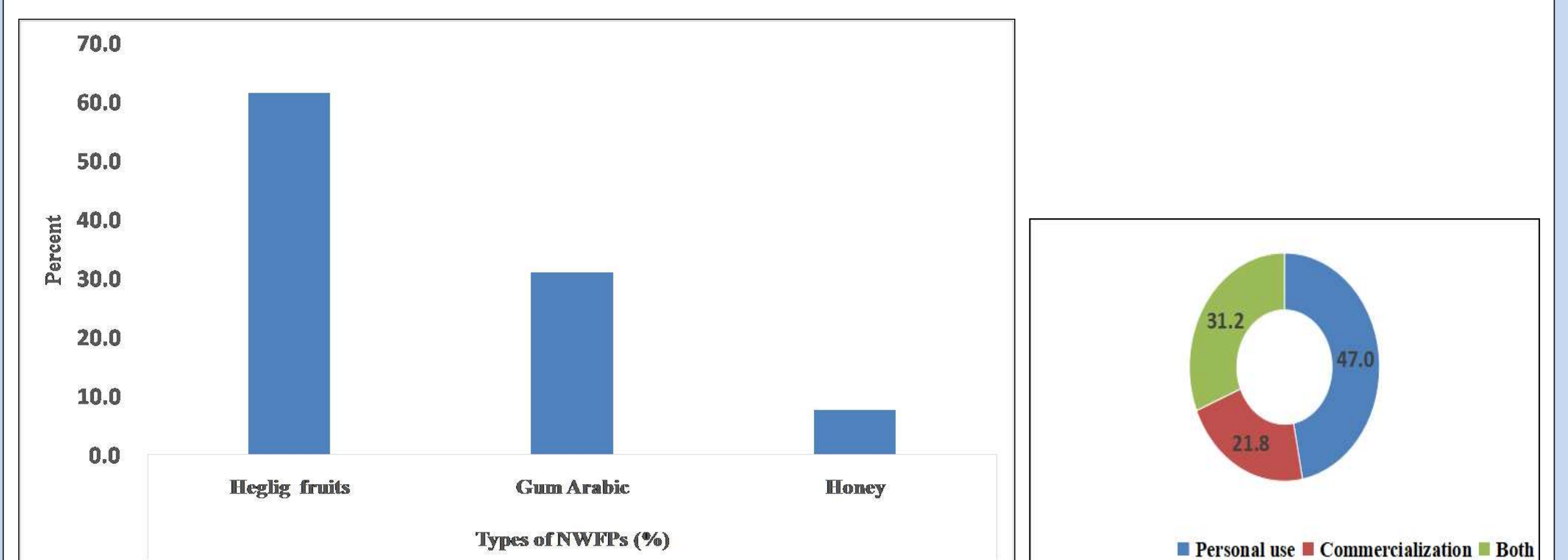

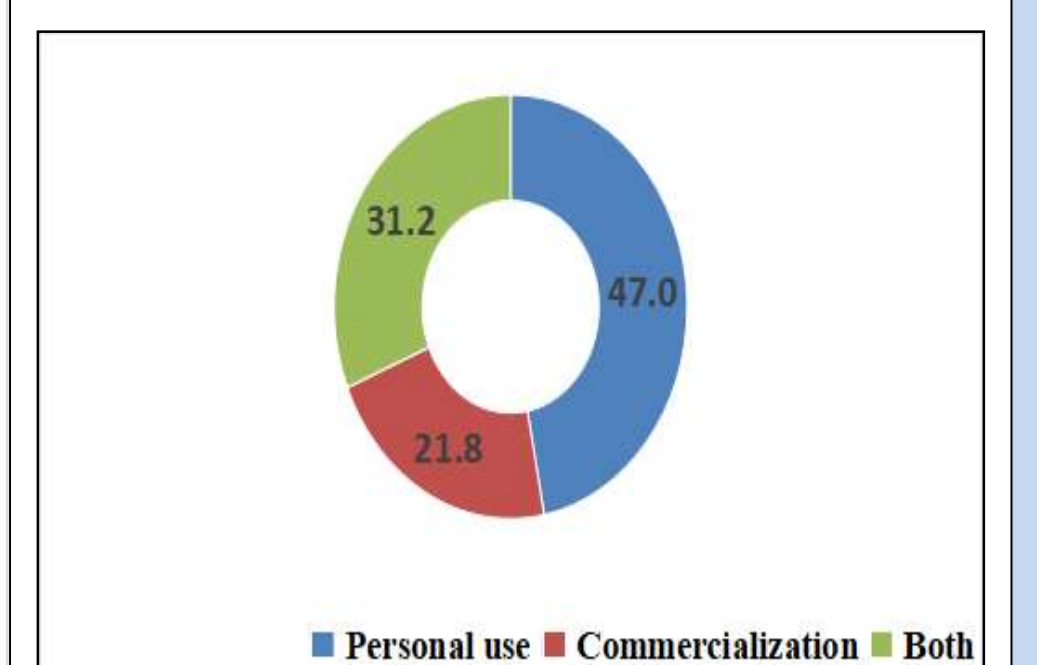**Figure 3: The types of NWFPs in the study area**

Figure 4: The NWFPs purposes

Figure 3, showed that the main non-wood forest products provided by Nowara forest represented by Heglig fruits (*Balanites aegyptiaca*) followed by Gum Arabic (*Acaia seyal*). Both of them are used for personal uses as well as commercialization purposes (see Figure 4).

Table 1: Heglig fruits and Gum Arabic production and prices in the study area

Main NWFPs contribution in poverty alleviation	Production	Respondents (%)
Average Heglig fruits production per tree per Kilo	< 1	5.4
	1-2	14.6
	5-6	18.1
	Unstable	61.9
Average Gum Arabic production per tree per grams	< 30	28.1
	51 - 60	18.8
	> 60	53.1
	Prices	**Respondents(%)**
Prices of Heglig fruits per Kilo /US$ *	0.265- 0.351	51.25
	0.353-0.439	16.25
	> 0.439	32.5
Prices of Gum Arabic per Kuntar /US$	0.877	4.2
	0.614	95.8

*I Dollar = 570 Sudanese pound in October 2022.

Table 1 summarized the Heglig fruits and the Gum Arabic production and prices. From the results presented in the table, it is obvious that the produced quantities of Heglig fruits and Gum Arabic are sufficient for personal consumption and for commercialization purposes. Both products provide the rural population by a good source of income .

Conclusion

Nowara natural forest offers many products and services to the rural population who live inside or around the forest. The products Include wood and non-wood products. Moreover, Nowara forest has significant contribution in enhancing the income of the local communities which leads to poverty alleviation of the rural population in the study area.

Hanadi Mohamed Shawgi Gamal
University of Khartoum, Faculty of Forestry,
Department of Forest Products and Industries

Tel.: 00201152753156
Email: hanadishawgi1979@yahoo.com