Full Length Research Paper

Evaluation of fuel wood marketing in Adamawa State, Nigeria

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The falling of trees for fuel wood (energy) consumption cuts across most rural and urban communities in sub-Saharan Africa. However, this activity denies the existence of forest trees and wood is burnt to produce carbon dioxide which is linked to climate change. In this paper, fuel wood marketing in Adamawa State, Nigeria is evaluated. Both descriptive statistics and gross margin (GM) analysis were used to evaluate marketing activities of 120 fuel wood marketers selected using a simple random sampling technique. Specifically, the objectives were to investigate the marketing channel and as well to examine the GM in fuel wood marketing in the study area. The GM was N2,132.91 with margin of 28.00%. The distribution channel indicates that the urban retailers who buy from urban whole sellers sell the product to home users, bakeries, breweries, food sellers, kebab joints and local food processing units, while the rural whole sellers hewn down the product from the nearby joint.

Key words: Fuel wood, marketing channel, gross margin.

INTRODUCTION

The word marketing extends beyond dictionary definition and is a widely interconnected subject with numerous definitions. The American Marketing Association (AMA) revisits its definition every 5 years and in 2008 defined marketing as the activity, set of institution and processes for creating, communicating, delivering and exchange offering that have value for customers, clients, partners and society at large.

Fuel wood is one of the most important sources of domestic cooking and heating (energy) especially in the rural areas despite the fact that it is difficult to flame, smoky and hazardous for children. In the opinion of Nzeh and Eboh (2007), forests contribute directly and indirectly to rural household livelihoods through the generation of income and employment from the sale and exchange of gathered and unprocessed non-timber forest products such as fuel wood.

World Bank (2000) reported that in sub-Saharan

African countries, especially Nigeria, fuel wood is the dominant source of energy for cooking and other activities. About 73% of the rural areas and urban households rely on fuel wood as a major source of energy for cooking. In urban areas, most people who use fuel wood buy in small bundles of– wood or charcoal, while in rural areas, people often gather their own fuel wood, sometimes rural people earn a small income by gathering fuel wood for those in urban areas. Despite these opportunities, fuel wood collection has series of environmental implications. It leads to deforestation and erosion which contribute to global climatic change. The demand for fuel wood is directly related to population. Adamawa State Economic Empowerment and Development Strategy (ADSEED, 2004) noted that the State used to be like a "Garden of Eden, with trees and forests everywhere'' but with an increase in human population and more people now there is serious

exploitation of natural resources, including cutting down trees for crop cultivation, shelter, cooking and exploitation of animals and fish. No one would ever have thought that these resources were exhaustible.

Furthermore, Agroforestry today (1993) showed that about 25% of the global warming effect is attributed to the clearing of tropical rainforest at the rate of 17 million hectare per annum. Also, CTA (2007) reported that Africa lost over 9% of its trees between 1990 and 2005 and this represented half of global loss. Bigger losers in this regard are countries like Angola, Cameroon, Democratic Republic of Congo, Nigeria, Sudan, Tanzania, Zambia and Zimbabwe.

The use of fuel wood has been on the increase due to increase in cost and scarcity of alternative sources, particularly Kerosene (Paul, 2008). In addition, fuel wood is consumed in large quantities in most parts of rural Africa.

In fact much has been known about the use, effect and exploitation of fuel wood but barely little is known about its marketing in Northern Nigeria in general and Adamawa State in particular. Salisu (2008) showed that the efficient functioning of the market system is based on a number of conditions. These include the existence and efficiency of certain legal and institutional foundations that guarantee private property, a well developed infrastructure that ensures reliable access to transportation and communication at minimum cost, and ready information about quality that must be symmetric.
More often than not, marketing of fuel wood has been facing the problem of lack of uniform measures, high transport cost and storage problems among other problems; it is against this background that that study evaluates the cost and returns, marketing margin and marketing channels of fuel wood in Adamawa State, Nigeria.

MATERIALS AND METHODS

The data for this study was predominately from primary sources. This was obtained through the use of structured questionnaires administered to 120 fuel wood marketers selected using a simple random sampling technique in Yola South and Yola North Local Government Areas of Adamawa State.

Analytical techniques

Budgetary techniques involving gross margin (GM) was used to determine the cost and returns associated with fuel wood marketing. GM was used for analysis because of the negligibility of fixed costs. GM is the differences between the gross income (GI) and the total variable cost (TVC) (Afolabi, 2007; Ehirim el al., 2007; Taru et al., 2010).

$$GM = GR - TVC$$

Where;
GM = gross margin (Naira/Bundle), TR = total revenue (N), TVC = total variable cost, *150 N = IUS $.

Marketing margin

The marketing margin is the differences between the price paid by purchaser (consumer) and that received by seller is expressed as (Olukosi et al., 2007):

$$MM = \frac{CP - SP}{CP} \times 100$$

RESULTS AND DISCUSSION

Marketing margin

Table 1 reveals the analysis of cost and returns associated with fuel wood marketing. The market tax constituted 4.6% of the TVC, while cost of ropes constituted 0.31% of the TVC. The average monthly cost of labour and cost of transportation were N121.35 and N113.28 and contributed 1.1 and 1%, respectively. The average monthly sales revenue is estimated to be N13,266.08, while the average monthly TVC is estimated to be N11,133.17. Therefore, the GM being the difference between total revenue and TVC is N 13, 26608 - N 11,133.17. The retailers make an average profit of N2,132.91 on fuel wood per month as revealed by the GMs, indicating that fuel wood marketing is profitable. It also suggests that the price is not detrimental for the consumers.

Marketing channel

According to Olukosi et al. (2007), market channel is the path of a commodity from its raw form to finished form. Figure 1 shows the distribution channel of fuel wood. It shows that the urban retailers who buy from urban wholesalers sell the product to home users, bakeries, breweries, food sellers, Kebab (suya) joints, and local food processing units, while the rural wholesalers hewn down the product from the nearby forest.

The retailers display the fuel wood in time and in a form convenient for the consumers. For bulk purchasers, the consumers can deal directly with wholesaler, thereby by-passing the retailers.

Marketing margin

The cost of fuel wood constituted 93% of the TVCs, while the average monthly cost of fuel wood was purchased at N10,35.6 and sold for N13,266.08 on average. The figures were extracted from Table 1, the margin is analyzed as follows:

$$Market\ margin = \frac{Cost\ price - Seller's\ price}{Cost\ price} \times 100$$

Table 1. Average costs and returns of fuel wood per month.

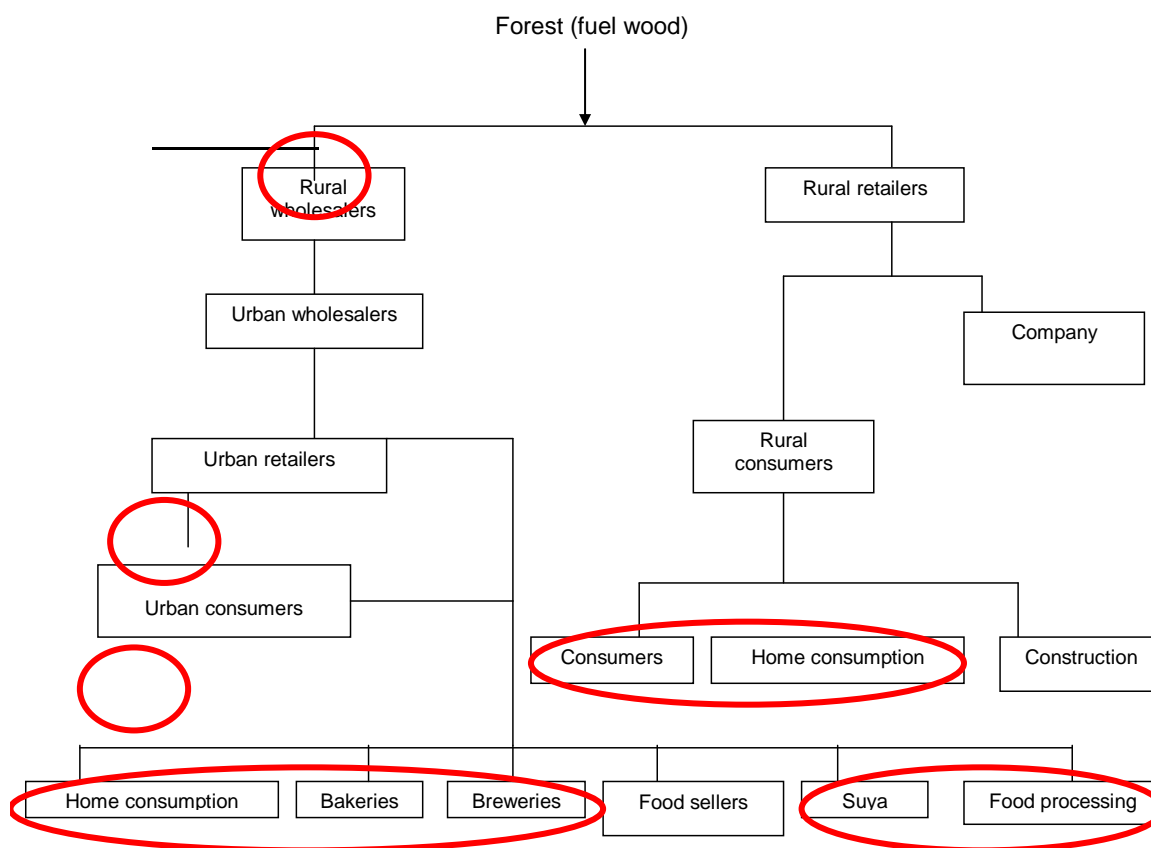| Item	Cost (N)	Percentage of total
Cost		
Total revenue		
Sales of fuel wood/month	13,266.08	
Variable cost		
Market tax	506.95	4.6
Cost of ropes	33.99	0.31
Labour	121.35	1.1
Cost of transportation	113.28	1.0
Cost of fuel wood	10,357.6	93.0
Total variable cost (TVC)	11,133.17	
Gross margin TR-TVC		2,132.91
Total		100

Source: Field Fancy (2010).

Figure 1. Marketing channel of fuel wood.

$$= \frac{10,357.6 - 13,266.08}{10,337.6} \times 100$$

$$= 28.08\%$$

Analysis of fuel wood marketing margin shows 28.08% as the final selling price received by the retailers, while the remaining 71.92% goes to wholesalers and gatherers of fuel wood in the industry. The high percentage (71.92%)

captured by the gathers and wholesalers could well be the reason why they remain in the business.

Conclusion

The study revealed that marketing of fuel wood involves different agents namely gatherers, rural and urban wholesalers, rural and urban retailers. The sale of fuel wood that generates income to the marketers is in the study area especially the dry season. However, the business contributes significantly to climate change.

RECOMMENDATION

1) The demand for fuel wood is usually high due to inadequate supply and high cost of kerosene. Therefore, the government should ensure adequate supply of kerosene at much subsidized rate. This would ensure accessibility to kerosene by households and reduce the demand for fuel wood.
2) The government should intensify their campaign through sensitization programmes on the effect of deforestation to the environment, encouraging afforestation to replace felled trees

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