

Costs and Added Value in the Marketing of Charcoal in Bujumbura

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Abstract

This study analysed the costs, the added value and its components in the marketing of charcoal in Bujumbura to identify areas in which interventions could improve efficiency in the charcoal marketing system. The study surveyed 100 retailers and 30 wholesale traders of charcoal. The information on their business was collected using a standardized questionnaire. The structure of marketing costs shows that transport and rental to civil servants are the main items in which significant efficiency gains could be achieved. Charcoal marketing is a wealth-creating activity as it generates positive added value. Our results suggest that any improvement in transport infrastructure in rural areas will benefit market efficiency.

Key words: Marketing, Costs, Value added, Charcoal

JEL Classification: M3, M31, M310, M41, M410

1. Introduction

Performance is a major concern of all economic agents at different levels: individual firms, industry, region, etc. (Mpanzu, 2012; Aoudji, 2011; Rwanda Ministry of Natural Resources, 2009; Jatau, 2008). It is a concept that encompasses several criteria. Those most commonly used in the literature are effectiveness, efficiency and equity (Hoffmann and Bernhard, 2007; Bertrand, 2003; Fraval, 2000). The performance of the marketing system drives the ability of traders to derive their business income (Kenya Ministry of Environment, Water and Natural Resources, 2013; Markelova *et al.*, 2009; Kilchling *et al.*, 2009; Daillo *et al.*, 2006; Dorward *et al.*, 2004).

Analysis of the performance of the marketing system is of paramount importance to inform decision makers in the design of sectoral policies, particularly in the agricultural and commercial sectors in developing countries (Rich *et al.*, 2011; Banque mondiale, 2008; Herbel *et al.*, 2003; Lebailly *et al.*, 2000; Raikes *et al.*, 2000). In light of this, our study aimed to provide informations on the marketing of charcoal by evaluating the costs of marketing charcoal and value added in the trade of charcoal in the city of Bujumbura, capital of Burundi. Thereon, marketing costs reflect the efficiency with which the marketing system performs its functions in the service of producers and consumers (Shepherd, 2007).

In performance studies by analysts, much attention has been paid to efficiency (Lebailly *et al.*, 2000). The ability of any activity, including marketing, to create added value is an important element for to each society (Lebailly *et al.*, 2000). In this study, it is assumed that there are opportunities to reduce marketing costs. Our research question aims to know if the marketing of charcoal in Bujumbura contributes to wealth creation and allows to improve the livelihood of the population. It is also hypothesized that the commercialization of charcoal is an activity of wealth creation, that is to say, it generates positive added value. We describe in the following paragraph the research methodology.

This paper analyses a newly assembled data set consisting of subjective indices of donations to authorities for to get their good will, the efficiency of the judicial system, and various categories of political stability for a cross some communes of the country. The expenses for get the good will of authorities are found to lower investment, thereby lowering economic growth.

2. Methodology

2.1. Study Area

This study was conducted in the municipality of Bujumbura and communes of Mugamba and Muramvya. Bujumbura was selected because the consumption of charcoal is higher. Mugamba and Muramvya were chosen because they are large producers of charcoal (IFDC, 2011).

Bujumbura is the capital city of Burundi, located in the west of the country on the shores of Lake Tanganyika. It is surrounded by the rural province of Bujumbura and bounded to the north by the district of Mutimbuzi, to the east by the districts of Isale and Kanyosha and to the south by the district of Kabezi. From 1990 to 2008, the town saw a growth rate in population of 4.2%, from 226,628 inhabitants in 1990 to 478,155 inhabitants in 2008. During the same period the national growth rate was 2.4%. The average household size was 4.9 people (Ministère Burundais de l'Intérieur, 2008). The concentration of the population in the suburbs has forced the city to extend, encroaching on rural areas.

Mugamba is one of the 9 communes of the province of Bururi located at 64 km away to the south from the city of Bujumbura. Its estimated population density is of 185 inhabitants per km² (Ministère Burundais de l'Intérieur, 2008). The commune of Mugamba does not have natural woodland. In this commune, there are three types of artificial forests namely community artificial forests that represent 69 % of total commune afforestation, wooded areas owned by the commune which represent 10% and those of the state representing 21%. These plantations occupy an area of 643.6 hectares. The main species are: *Eucalyptus*, *Cedar*, *Callitris*, *Grevillea* and *Pinus* and the various uses of wood are firewood, charcoal, boards, planks, posts and poles.

The commune of Muramvya is located in the Est at 48 km away from the city of Bujumbura, on the national road south to Gitega. It has an estimated population density of 359 inhabitants/km² and covers three natural regions of Burundi including: Kirimiro, Mugamba and Mumirwa with the largest part in Mugamba region. The inventory of woodland conducted in this locality revealed that 1000 hectares of natural forest of Kibira are found in this commune added to other 1260 hectares of artificial forests owned by the state and communes and private individuals with respectively 29.1%, 6% and 64.9% (Ministère Burundais de la Planification, 2006). The following figure shows the geographical localization of the studied area.

Figure 1: Geographical distribution of Burundi communes



2.2 Sampling and Data Collection

A survey was conducted in March and April 2015 with 100 retailers and 30 wholesale traders. On the list of wholesale traders association, a random choice is made on the wholesale traders and 30 wholesale traders, who buy charcoal in Mugamba and Muramvya and those providing rental vehicles to transport the charcoal are concerned within our study. 15 wholesalers were selected in each commune. The 100 retailers selected are those that sell charcoal supplied by the wholesalers cited above. Data were collected on the basis of a standardized questionnaire with provided of closed questions. This aimed to identify the functions performed by the traders based on the typology of marketing functions provided by Goossens (1998). A detailed inventory of costs and revenues related to the last supply of charcoal was made by treating wholesale and retail separately. To determine the costs related to the commercialization of charcoal, a guide dressed by Shepherd (2007) was used. The data were collected in Burundian Francs (BIF) and the exchange rate at the time of the study was used to convert to US\$ (US\$1 = 1538.78 BIF on average during the survey).

2.3. Processing and Analysis of Data

The study first determined the costs of marketing and value added per market segment (wholesale and retail). These parameters were calculated based on a loading of 90 charcoal bags of 80 kg each per vehicle for wholesale traders, and 27 charcoal bags sold by each retailer. Cost accounting was used to calculate the fixed costs. The total cost was calculated by summing the costs incurred for marketing. The cost structure was obtained by calculating the percentage of each component in the cost. The value added is the difference between the

turnover and intermediate consumption (Tallec and Bockel, 2005a; Tallec and Bockel, 2005b; Lebailly *et al.*, 2000). The added value is the remuneration for the production factors, comprising labour, capital and natural factors. Typically, the value-added calculation includes wages, financial expenses, taxes, depreciation and net operating income (invested capital, family labour and management). Table 1 shows the production-trading account elements.

Table 1: Production–Trading Account Elements

Debit	Credit
Intermediate consumption	Turnover
Value added	
1. Salaries	
2. Financial expenses	
3. Taxes	
4. Gross operating income	
4.1. Net operating income	
4.2. Amortization	

Source: Lebailly *et al.* (2000)

Wholesaler traders provide for the collection and transportation of charcoal from rural locations to the various city retail outlets located throughout the city of Bujumbura and nearby districts of households and consumer craftsmen. The wholesale traders considered within this study are those for which the transport of charcoal is outsourced.

3. Results

The structure of marketing costs for the wholesale segment includes transportation costs, from certain miscellaneous expenses to avoid hassles with the state officials, to communication costs, sourcing trips and taxes. The most important components in the structure of marketing costs are transport (truck rental, fuel costs for the driver and the conveyor) and the labour costs (Table 2).

The donations are a practice often used by police agents and other state authority agents responsible of forest during the transportation of charcoal and relates to procedures for obtaining permits to transport charcoal, licensing and other administrative requirements, such as proceeding through checkpoints during the transportation of charcoal. These costs are wrongly considered by some traders as taxes. The most important components of the structure of marketing costs in percentage terms are transportation (68.9%), taxes (21.5%) and wages (10.4%). The donations to state employees represent 8.1%.

Table 2: Cost Structure of a Loading 90 Bags of Charcoal in Wholesale Market

Items	Amount (in BIF)	Percentage
Truck rental fees	250,000	28.9
Fees for driver and conveyor	60,000	6.9
Fuel	300,000	23.1
Communication costs	10,000	1.2
Salaries for loading and unloading charcoal	90,000	10.4
Donations	70,000	8.4

Tax for the Burundian Revenue office	81,000	9.4
Tax for the municipality of origin	45,000	5.2
Tax for city of Bujumbura	60,000	6.9
Total	1,266,000	100

Source: Author's own elaboration this work

Table 3 shows the intermediate consumption regarding charcoal, truck rental fees and charges for meals for drivers and conveyors, fuel and communications costs. The added value consists of the following: labour charges, donations to authorities for to get their good will, taxes and the net operating profit of the wholesale trader.

Table 3: Wholesale Production–Trading Account (Loading of 90 Bags of Charcoal)

Item(s)	Amount (in BIF)
Charcoal	2,160,000
Truck rental fees	200,000
Fees for driver and conveyor	60,000
Fuel	300,000
Communication costs	10,000
Intermediate consumption	2,730,000
Salaries for loading and unloading charcoal	90,000
Donations	70,000
Tax for the Burundian Revenue office	81,000
Tax for the municipality of origin	45,000
Tax for the city of Bujumbura	36,000
Net operating income	548,000
Added value	870,000
Turnover	3,600,000

Source: Author's own elaboration

The turnover generated by the wholesale trade of coal is the product of the number of bags of charcoal by the sale price of a bag of coal in Bujumbura. The unit price is BIF 40,000/bag (25, 9 US\$). The value added is positive. The marketing of charcoal by wholesale merchants is a wealth-creating activity. Net operating income (RNE) is positive and represents 62, 9% (the majority) of the value added. The wholesale marketing of charcoal generates jobs and workers are the second largest beneficiary of the added value. The marketing of charcoal by wholesale traders is somehow a wealth-creating activity.

The marketing costs in the retail segment of charcoal consist of the following: the rental fees for the point sale, costs to equip the point sale, communication costs, costs of sales and security and taxes (Table 4).

Table 4: Cost Structure for Marketing Charcoal in the Retail Market

Items	Amount (in BIF)	Percentage
Sales deposit	50,000	24.4
Equipping sales deposit	40,000	19.5
Communication costs	5,000	2.4
Selling and service security expenses	80,000	39.0

Tax for the city of Bujumbura	30,000	14.6
Total	205,000	100

Source: Author's own elaboration this work

Intermediate consumption for charcoal consists of the rental of the sales deposit, filing equipment and telecommunications costs. The value added by the retail trade of charcoal is positive (Table 5). It consists of salaries for sales and security, city tax and net operating income. Net operating income is 50% of the added value and represents the largest share of the value, followed by the workers' wages.

Table 5: Retail Production–Trading Account (27 Bags)

Items	Amount (in BIF)
Charcoal	1,080,000
Sales deposit	50,000
Equipping the sales deposit	40,000
Communication costs	5,000
Intermediate consumption	1,175,000
Selling and service security expenses	80,000
Tax for the city of Bujumbura	30,000
Net operating income	65,000
Value added	175,000
Turnover	1,350,000

Source: Author's own elaboration this work

The turnover generated by the retail trade in charcoal is the product of the number of bags by the amount for which a bag of charcoal is sold in Bujumbura by retail traders. This amount average was BIF 50, 000/bag (US\$ 32, 49).

4. Discussion and conclusion

Two types of traders are operating in the marketing system of charcoal: wholesalers and retailers. Cost reduction opportunities are slim because they concern essential operations: loading, transportation and unloading charcoal. These activities use unskilled labour and are accompanied by a distribution of wages in the trading account, having a positive social impact. Transportation and donations to authorities for to get their good will are the components that provide more opportunities for reducing marketing costs. Transportation is often a key component of agricultural marketing costs in South-Saharan Africa (Jatau, 2008; Fafchamps *et al.*, 2003). Apart from the effect of distance, transport costs are influenced by the poor road infrastructure.

Therefore, any environmental improvement in transport infrastructure can contribute to a reduction in transportation costs. However, this issue is wider than the marketing of charcoal and could be part of a general policy to support the marketing of products. The poor state of the roads also causes damages to the trucks and therefore frequent breakdowns and higher maintenance costs. This causes a lack of capital and raises the issue of access to credit for

economic agents. This issue is part of the overall framework of policies supporting entrepreneurship (Aoudji, 2011).

Unfortunately few traders comply with the laws in place for charcoal trade, and therefore, donations to authorities for to get their good will are an important phenomenon. Those fees penalize the marketing system, because such costs are not linked to any service. This causes a major constraint on wholesalers given the negative effect on their income (Aoudji, 2011; Burns *et al.*, 1999.). To reduce this type of behaviour, in agreement with Siebert and Elwert (2004), there is a need to undertake reforms in the transport sector and improve the functioning of administration in relation to transportation.

Trade in charcoal generates a positive added value (Ndacasaba, 2012a, 2012b). This value is limited to the transfer of charcoal from the point of production to the point of sale. The activity of traders is profitable, which is an interesting result. Profitability is a condition proof to continue the charcoal (Aoudji, 2011; Shepherd, 2007). In addition to self-employment, charcoal trade generates jobs linked to handling operations. This social role is very important in a country where unemployment and underemployment are very high (Rwanda Ministry of Natural Resources, 2009; Kenya Ministry of Environment, Water and Natural Resources, 2013).

For trade of charcoal to be efficient, actions must be taken by the State including the upkeep of road infrastructures and improvement of means to struggle against corruption.

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