

Profit and profit distribution along Ghana's charcoal commodity chain

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ABSTRACT

Are lucrative charcoal markets in Africa reducing poverty for people in the trade? In spite of its economic significance, the extent to which charcoal income reduces poverty is debatable. This article applies commodity-chain analysis to Ghana's charcoal commodity chain to describe the characteristics of actors, and to quantify and explain the profits reaped by the different actors in the chain. We estimate that profits of US\$66 million are generated annually. The distribution is highly skewed between and within actor groups, with 22% of profits reaped by merchants, who make up only 3% of the actors in the market. The majority of producers and retailers, by far the largest groups in the sector generate incomes below the national minimum wage. Women dominate the market in terms of number of persons involved. Women and men earn equal incomes at all levels of the market except at the production level, where men reap higher profits than women. People from several ethnic groups engage in the market, but members of the Sissala and Asante ethnic groups are the most frequently encountered ones throughout the chain. Improving equity along the charcoal chain will require breaking the interlocking credit-labor arrangement that enables merchants to have control over charcoal prices, and improving producers' access to urban markets. The paper makes policy recommendations in this regard.

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Introduction

In most sub-Saharan Africa countries, close to 90% of urban households depend on charcoal for cooking and heating (Shively, Jagger, Sserunkuuma, Arinaitwe, & Chibwana, 2010; Zulu, 2010). Supplying this fuel—charcoal production and trade—contributes to the income of an estimated 7 million people, projected to increase to 12 million by 2030 (Mwampamba, Ghilardi, Sander, & Chaix, 2013). Demand for charcoal is on the rise across the continent. Arnold, Kohlin, and Persson (2006) estimate that by 2030 it will double from its 2000 base of 23 million tons. This growth will change the structure of charcoal markets and affect wood resources (Arnold et al., 2006; Zulu & Richardson, 2013). Despite its economic significance, there is great uncertainty about the importance of charcoal production and trade for income, poverty reduction, and wellbeing (Agyeman, Amponsah, Braimah, & Lurumuah, 2012; Zulu & Richardson, 2013).

Studies on charcoal income and livelihoods in Africa use different calculation methods, data sources, and terminologies (e.g., gross revenue, margin, profit), making it difficult to compare studies and provide sound conclusions and policy recommendations (Baumert et al., 2016; Obiri, Nunoo, Obeng, Owusu, & Marfo, 2014). Recent scholarly work on charcoal commodity chains in Africa and their income distribution

suggests that charcoal production and trade is profitable but that profits are unequally distributed along the chain (Baumert et al., 2016; Kambewa, Mataya, Sichinga, & Johnson, 2007; Ribot, 1998; Shively et al., 2010). A general pattern emerges whereby particular groups of actors, notably merchants, wholesalers, and transporters, reap the larger share of charcoal profit. In Kenya, about US\$1.6 billion is generated annually in the charcoal market, with wholesalers, retailers, and transporters gaining 78% of the profit, while producers (being 30% of the actors) control only 22% (Kenya Forest Service, 2013). For Senegal, Ribot (1998) reported that wholesalers and merchants captured the major share of the annual US\$6.6 million profits in the market, while the net incomes of retailers and producers were below subsistence. In Malawi annual charcoal income in the four largest urban areas (Blantyre, Lilongwe, Mzuzu, and Zomba) is US\$41 million, with values accruing to producers from 20% to 33% of retail price, while transporters earn 20% to 25%, and retailers obtain 25% to 33% of final selling price (Kambewa et al., 2007). In Burkina Faso, Mali, and Niger, benefits are also unevenly distributed, with wholesalers and transporters making the greatest profits (Bodian, Guidal, & Jorez, 2012, in Schure, Ingram, Sakho-Jimbira, Levang, & Wiersum, 2013).

Much scholarly attention has been devoted to understanding the stratification and profit distribution among different groups in the charcoal trade. However, limited empirical evidence exists on intra-group stratification, that is, how much income is controlled by individual actors within the groups (nodes) along the charcoal chain; for an exception, see Ribot (1998). Further, most studies focus on a single

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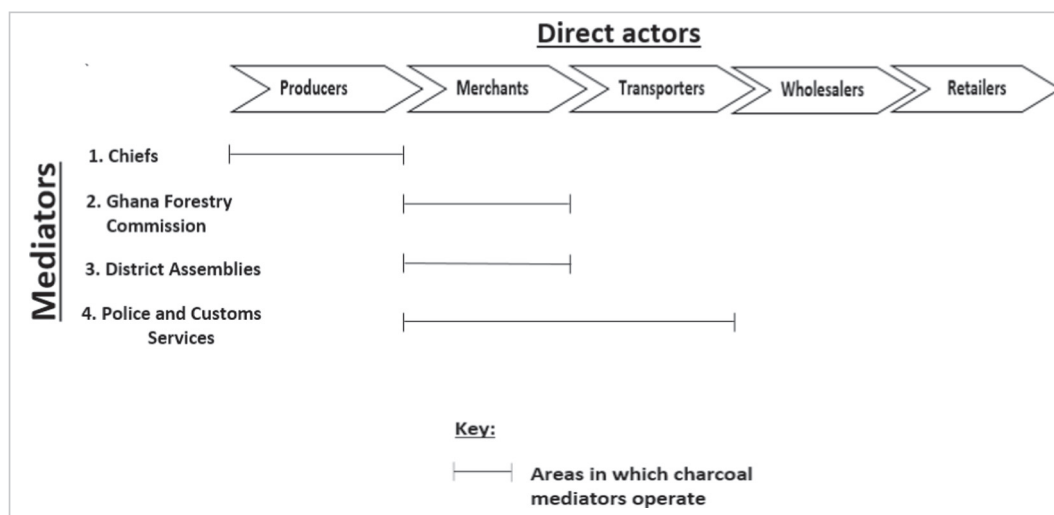


Fig. 1. Commodity chain actors and mediators along Ghana's charcoal commodity chain, and areas in which charcoal mediators operate. (Source: adapted from Obiri et al., 2014; Obour-Wiredu, 2017).

commodity chain – typically originating in a major production site and ending in the capital city (Baumert et al., 2016; Jones, Ryan, & Fisher, 2016; Ribot, 1998). Finally, many studies do not examine the entire charcoal chain but focus on the production node (Agyeman et al., 2012; Anang, Akuriba, & Alerigesane, 2011; Smith, Eigenbrod, Kafumbata, Hudson, & Schreckenber, 2015).

This paper addresses these gaps through a detailed study of the profit distribution in a charcoal commodity chain in Ghana with three end markets. In Ghana few studies have investigated the charcoal commodity chain and profit distribution (Agyeman et al., 2012; Anang et al., 2011; Obiri et al., 2014). Understanding the profit distribution, i.e., for whom Ghana's charcoal market works, is an important starting point for improving equity and wellbeing along charcoal commodity chains in Ghana and beyond. In this paper we specifically address the following two questions: 1) Who is involved in the charcoal commodity chain in Ghana, and what are their characteristics (gender, ethnicity, age, etc.)? 2) What profits are controlled between and within the various categories of actors? We undertake commodity-chain analysis (Ribot, 1998) of a charcoal chain originating in the Kintampo Forest District in the Brong Ahafo Region (the main charcoal production area in the country) and going to the three largest end markets in Ghana: Kumasi, Accra, and Takoradi.

The paper's next section provides an overview of charcoal production and trade in Ghana. **Methods** section outlines the methods used for data collection and analysis. **Results** section presents our findings, followed by the **Discussion** section. The final section concludes the paper and outlines policy recommendations.

Background: charcoal production and trade in Ghana

Charcoal is the dominant energy source for the urban population in Ghana, constituting 52.6% of overall household energy demand (Energy Commission, 2010). Charcoal is produced across the country, but the bulk of the production occurs in the Brong Ahafo and Eastern Regions, with Kintampo, Atebubu, Nkoranza (Brong Ahafo Region), and Afram Plains (Eastern Region) as the key production areas (Nketiah & Asante, 2018). Charcoal marketing (wholesaling and retailing) is done mainly in the cities. Important market destinations include Accra, Koso, Kumasi, and Takoradi (Obiri et al., 2014). Wood for charcoal production is sourced from agricultural and fallow lands, forest/bush/savannah lands, and forest reserves (Anang et al., 2011; NCRC, 2008). People considered members of the ethnic group that first settled in an area (“indigenous farmers” or “autochthons”) usually have the right to

produce charcoal from communal land for free, while people not considered members of the first ethnic group (“non-indigenous farmers” or “migrants”) must obtain such rights from the chief and/or landowner for a fee (Amanor, Osei, & Gyampoh, 2005; Obiri et al., 2014).

The direct actors involved in Ghana's charcoal sector are producers, merchants, transporters,¹ wholesalers, and retailers (Obiri et al., 2014; Fig. 1). Producers cut and carbonize wood into charcoal and sell to merchants. Merchants hire truckers to transport the charcoal from villages to cities, where it is consumed. In the cities, merchants sell charcoal to wholesalers and retailers. Wholesalers sell charcoal to retailers and charcoal users in big sacks (such as 50-kg), while retailers sell charcoal in small cans and polythene bags to end users. Most producers and transporters are male, whereas charcoal marketers—merchants, wholesalers, and retailers—are predominantly female (Amoh-Anguh, 1998; Blay, Dammyag, Twum-Ampofo, & Dwomoh, 2007; Obiri et al., 2014). The Ghana Forestry Commission, District Assemblies (local government), chiefs and landowners, and the police are involved in the market as mediators of production and marketing. Chiefs and landowners grant producers rights to trees for charcoal production in exchange for rents (fees). The Ghana Forestry Commission and District Assemblies grant permission to transport charcoal from production sites to consumption sites in the form of a Charcoal Conveyance Certificate (Forestry Commission) and council ticket (District Assembly). The police and the customs services check receipts and collect informal fees from charcoal merchants and transporters in the form of “gifts” and “drink” monies (Obour-Wiredu, 2017).

Methods

Study area

Data were collected along a charcoal commodity chain originating in the Kintampo Forest District, and ending in the three major urban centers of Ghana: Accra, Kumasi, and Takoradi (Fig. 2). Two customary paramount systems (Nkoranza and Mo) exist in the Kintampo area, each of them having divisional chiefs under them (Table 1). The Bonos are the indigenous people in the villages under the jurisdiction of the Nkoranza paramount chief, and the Mos are the indigenous people in the villages under the Mo paramount chief (Ghana Statistical Service,

¹ Transporters in this study do not own the charcoal, but most of them have specialized in the transport of charcoal and are thus included as direct actors. Transporters are drivers of vehicles. They are not necessarily the owners of vehicles.

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