POLICY BRIEFS • ACCESS AND EXCLUSION ALONG THE CHARCOAL COMMODITY CHAIN IN GHANA
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Charcoal production and trade in Ghana: An overview of the outputs of the AX project

Introduction

The research project "Access and Exclusion along the Charcoal Commodity Chain in Ghana" (AX) is a collaboration between the Kwame Nkrumah University of Science and Technology, University of Ghana, Tropenbos Ghana and University of Copenhagen. The project ran from 2015 to 2021 with financial support from the Ministry of Foreign Affairs of Denmark.

This first policy brief from the project gives a summary of the main findings of the project. The other policy briefs from the project discuss the policy issues in more details: No. 2 on the production level and main areas of charcoal production. No. 3 on livelihood aspects. No. 4 on the commodity chain and profit distribution and No. 5 on policies of plantation establishment for charcoal production.

Charcoal production and consumption in Ghana

Charcoal is the primary energy source for cooking for many households in urban and peri-urban areas as well as for public institutions, restaurants and food stalls in Ghana.
Compared to firewood, it has a higher calorific value per unit of weight; it is easier to transport and produces comparatively less smoke. The use of charcoal requires lower capital investments compared to electric and gas stoves.

Policy implications and recommendations

- Ghana lacks reliable information on the annual production and consumption of charcoal. The project has developed a simple methodology for estimation of annual charcoal production level. Using this methodology, we estimate that Ghana produces 1,100,000 tons of charcoal annually from woodlands, farms and fallows. Most of the charcoal is produced in the forest-savannah transition zone. The production and consumption of charcoal in Ghana is projected to increase over the coming decade.

- The findings from the project illustrate that charcoal production is an important cash contributor to rural livelihoods in the production areas. Charcoal serves as a gap-filler in slack agricultural seasons and a safety net in case of extraordinary needs. In addition, charcoal provides incomes for merchants, transporters and for urban wholesalers and retailers. Chiefs and district assemblies in charcoal producing areas benefit through fees, as does the Forestry Commission through the Charcoal Conveyance Certificate.

- Our research shows that the distribution of profits in the charcoal commodity chain is highly skewed with merchants (and transporters) generating much higher incomes than producers. This is because of the merchants' control over credit opportunities and superior market knowledge compared to producers. This may call for policy interventions that attempt to enhance producers' profit margin by providing alternative credit opportunities and assistance towards organizing producers into associations, but experiences from other sectors are not promising. The results suggest that there may be scope for further taxation of charcoal at the level of merchants and transporters, as introduced with the Charcoal Conveyance Certificate.

- A number of recent policy documents advocate tighter regulation and control of the charcoal sector in Ghana. They justify the proposed interventions with sustainability concerns that establish a direct link between charcoal production and deforestation. However, the relationship is poorly supported by evidence and, generally, the policy documents appear to be based on limited knowledge on how charcoal is produced and its linkages to agricultural production on the very same lands. We suggest that future government interventions must take the current charcoal production patterns and the de facto governance arrangements as point of departure, and be implemented in a step-by-step manner. If not, they may be counter-productive and jeopardize rural livelihoods, especially of vulnerable groups.

- The new policies stipulate a drastic transformation of current charcoal production towards plantation production. Again, the proposed policy change appears to be not sufficiently based on knowledge of current charcoal production contexts, the experiences from already existing plantation establishment in the forest-savannah transition zone and an insufficient specification of whom are to be involved in the new fuelwood plantation establishment. There is a risk that fuelwood plantation establishment on a large scale may worsen already existing processes of dispossession of vulnerable groups of access to agricultural lands.

The project estimated the annual production (and hence consumption) of charcoal in Ghana based on data from charcoal conveyance certificates issued by the Forestry Commission. To capture movement of charcoal that takes place without certificates, we mounted checkpoints and did around the clock monitoring and interviews with truck drivers along the main charcoal transport routes in the country. The research also involved detailed case studies and expert consultation.

We describe the full methodology in AX Policy brief No. 2 and Nketiah et al. (2021).

The study estimated national annual production of charcoal at one million, one hundred thousand (1,100,000) tons. Figure 1 illustrates the main charcoal production areas. The annual production estimate is higher than previous estimates by the Energy Commission (950,000 tons; 2001 data), but lower than an estimate based on charcoal reliance (share of

population using charcoal) and per capita consumption, amounting to 1,650,000 tons per year (2011). The demand and consumption of charcoal in Ghana may increase over the coming decade because of migration from rural to urban areas.

We propose that the methodology for estimating annual charcoal production could be taken up by the Forestry Commission and the Energy Commission, perhaps with further modifications, to provide regular and reliable charcoal production statistics.

Charcoal production: An important source of income and livelihood in rural areas

We studied charcoal's contribution to livelihood in the Kintampo Forest District; a "hotspot" of charcoal production (Figure 1). Four hundred households within ten communities participated in the study. About 63% of households were involved in charcoal production, and charcoal is the second most important livelihood activity after agriculture. Incomes from charcoal production, trade and wage work constituted 17% of average, total household income. Both the relatively poor and better-off households participate in charcoal production, but the better-off households generate higher absolute and relative income (share of total income) from charcoal.

Charcoal serves as a safety net in the dry season where few alternative income opportunities exist. The safety net function is particularly important for poorer households. Moreover, charcoal serves an

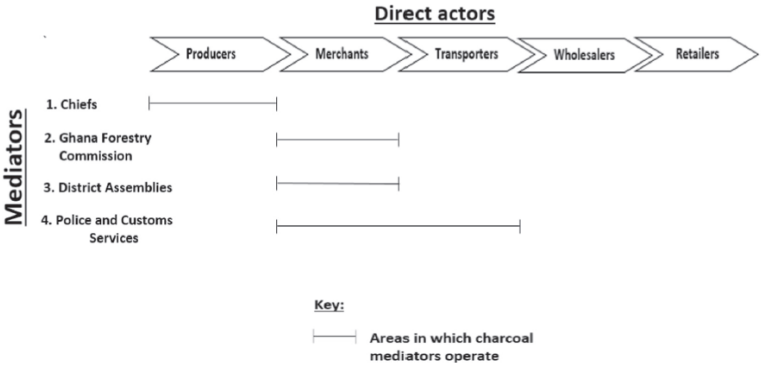

Figure 2: Actors and mediators in the charcoal commodity chain in Ghana.

important gap-filling function in mitigating economic shocks, e.g. from illness, death of family members, crop failure and to cover extraordinary costs in relation to e.g. weddings and funerals.

As noted, the project investigated the link between charcoal and livelihood in a "hotspot" of charcoal production. The livelihood effects in areas with lower

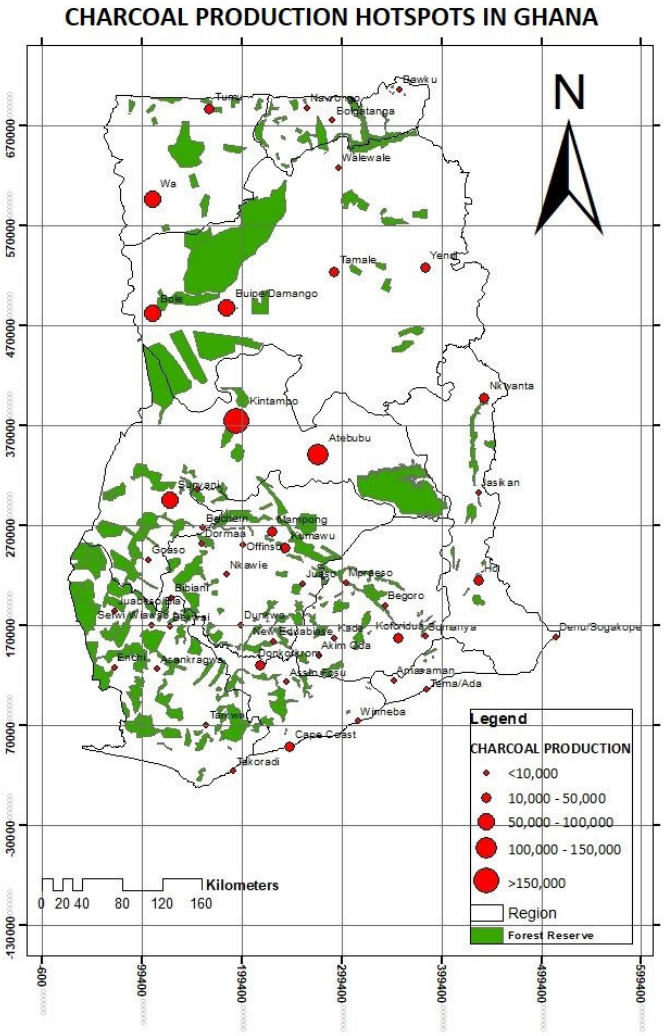

Figure 1: Map of key charcoal production areas in Ghana. Size of circles indicate annual production of charcoal (in ton).

production levels may not be the same. For further information on charcoal production and livelihoods, see AX Policy Brief No. 3.

The charcoal commodity chain in Ghana: A highly skewed distribution of profits

Citizens in the main production sites consume little charcoal; most charcoal is transported to urban areas. The project made detailed investigations into the entire value chain of charcoal from the production site to the consumer (Figure 2). Five hundred and eighty interviews were conducted among the actors in the chain and those mediating the trade.

Charcoal production is an important source of income for producers in rural areas, but producers do not reap the main share of profits in the sector; merchants and transporters do. Our results illustrate that the average annual net income (after deduction of expenditures) of merchants are ten times higher (average of USD 5,383) than that of producers (USD 526). Merchants generate higher profits because they

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control credit opportunities (producers need credit to start producing). Merchants also know the urban markets, including information on prevailing market prices.

In addition to the direct actors in the chain, other actors generate profits and revenues. Chiefs charge fees, typically on each bag of charcoal produced, to be paid by (migrant) producers. The Forestry Commission charges merchants a fee to issue a charcoal conveyance certificate for each vehicle transporting charcoal, the fee depending on the number of bags transported. The district assemblies charge fees on vehicles. Finally, the police and forestry personnel charge informal fees from transporters. For further details on profit distribution and the structure of the charcoal sector, please refer to AX Policy Brief No. 4.

Governance: Aspirations for control and regulation

Multiple institutions engage in governing charcoal production and trade in Ghana at the intersection between customary and formal rules. All timber trees are vested in the President of Ghana and their utilization requires a permit from the Forestry Commission. The definition is unclear and begs questions as to whether many of the tree species used for charcoal production are timber trees? The definitional issue apart, the Forestry Commission holds no control over trees for charcoal production and the permit requirement is on paper only, not actually enforced on the ground. In practice, it is chiefs and landowners, who control access to trees for charcoal production and grant access under various customary and payment arrangements.

In recent years, government institutions in Ghana have issued policy documents with visions to strengthen regulation and control of the sector. The policies seek justification in concerns over the lack of sustainability of the sector, more specifically in a narrative of charcoal production leading to deforestation. However, the narrative is poorly supported by evidence and does not take into account the multiple ways that charcoal is produced in woodlands, farms and fallows. Please refer to AX Policy Brief No. 5 for a more elaborate discussion on this issue.

The aspirations for closer government control of the sector manifest in plans for central registration and vetting of producers, merchants and transporters, a government administered permit system for production, transport and trade and charcoal certification. Most plans are still in the concept phase. A concrete intervention is Ghana Forestry Commission's recent introduction of a charcoal conveyance certificate. This is a fee charged on each vehicle transporting charcoal, depending on carrying capacity. It functions mainly as a measure to generate revenues from the sector. New regulation, and efforts to enforce it, need to take into consideration the local context, past experiences of regulation and control and vulnerable groups (women, youth and migrants). New measures run the risk of harming those who rely on charcoal for their livelihood without necessarily delivering the outcomes they set out to deliver.

We therefore caution a policy process with emphasis on broad sector inclusion and taking small steps forward and evaluating progress before taking next step.

Future woodfuel plantations

Recent policy documents promote a drastic transformation of charcoal production whereby fuelwood plantations are to serve as the main source of wood for charcoal rather than the woodlands, farms and fallows that currently provide most of the wood for charcoal. The policies do not appear to be based on detailed knowledge of how charcoal production is currently carried out, notably its integration and complementarity with agricultural production in the forest-savannah transitional zone. Neither do the plans specify the investment need and who should take up this investment: who should do the plantations? The forest-savannah transition zone has already experienced a very significant expansion of plantations (teak, woodlots, mango and cashew) resulting in difficulties for women, migrants and youth to access land for food crops. Promotion of woodfuel plantations without careful consideration and planning runs the risk of amplifying problems and dispossession, without necessarily enhancing the wood production for charcoal. Please see AX Policy Brief No. 5 for more on this issue.

The last words

The charcoal sector in Ghana is important on many accounts: it provides energy, it contributes to livelihood and taxation, it has important implications for the environment and climate change, it is intimately related with the agricultural sector, and it is a nexus for struggles over authority between politico-legal institutions. The AX project has examined the sector from multiple angels and provided research findings, which we hope will feed into the policy process. The sector has been neglected by policy for long and recent policy documents are efforts to mitigate the situation. However, for policies to be successful, they need to be move away from standard, yet inaccurate, narratives and discourses about charcoal production and rather take point of departure in detailed and contextualized information and data. We hope that the AX project has made a contribution in this regard.

An overview of outputs from the AX project

Website

The project website provides a description of the project, partners and lists all outputs: www.ifro.ku.dk/AX

Documentary

The project has produced a documentary with the title "Formalization of charcoal production and trade and livelihood outcomes in Ghana."

It is available in three versions:

1. Short version – English (20.13 min)
   https://www.youtube.com/watch?v=FD1fhHxzCRU
2. Long version – English (26.59 min)
   https://www.youtube.com/watch?v=Esou6MqUbcw&t=26s
3. Short version – Twi (18:51 min)
   https://www.youtube.com/watch?v=rvzSVDv14dI&t=25s

Policy briefs

No. 1. Charcoal production and trade in Ghana: An overview of outcomes of the AX project.

No. 2. Annual Charcoal Production in Ghana: Implications for sustainable production and trade.

No. 3. Charcoal: An important source of household income in the forest savannah transition zone of Ghana.

No. 4. Who profits from Ghana's charcoal trade, and how?

No. 5. Policy frameworks for plantation models of charcoal production in Ghana: Evidence-based approaches and equity.

Scientific papers

- Agyei, F.K., Hansen, C.P., Acheampong, E. (2018). Profit and profit distribution along Ghana's charcoal commodity chain. Energy for Sustainable Development 47: 62-74.
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PhD, MPhil and MSc theses

See the AX website: www.ifro.ku.dk/AX

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