



## Policy pointers

**Local communities and** community associations need technical and financial support to access commercialisation rights (licences) and take advantage of the opportunities that come with them.

**Developing strong local** institutions will enable communities to participate in forest management and communal charcoal commercialisation, improving the share of benefits at local level.

**To optimise the forest** exploitation allocation process, the government should ensure that communities have enough information on their rights, responsibilities, obligations, management and charcoal production options so they understand the implication of their decisions.

**Ensuring urban** communities have access to affordable and alternative energy sources, including electricity and gas, will reduce demand on charcoal and firewood.

## Charcoal supply chains from Mabalane to Maputo: who benefits?

Charcoal is the main cooking energy source for people living in Maputo city. It is also a crucial source of income for rural producers in Mabalane district, a key supplier of Maputo's charcoal. But Mabalane's forests — which provide the wood for charcoal — also supply rural populations with construction materials, firewood and food. Our research shows that the lack of community management in Mabalane's charcoal trade has disadvantaged communities, widening income inequality and causing ecological depletion. To reverse these trends, we recommend that policymakers strengthen community management institutions, install sustainable management practices, review existing licensing schemes and seek affordable alternative energy sources. This will help ensure the charcoal trade operates in an inclusive and sustainable way.

### Understanding rural-urban links in the charcoal value chain

Charcoal is a major energy source in most African countries and Mozambique is no exception. As population growth and urbanisation have increased the demand for charcoal, wood extraction rates have soared around urban centres and expanded in rural forest areas.

We acknowledge that Mozambique needs to meet its population's energy demands, but biomass energy drives deforestation and forest degradation in many areas of Mozambique. Even selective exploitation for charcoal production results in degradation. It is also usually followed by a less selective second round, which leads to deforestation and land use change. Understanding the actors along the value chain can help us find solutions to this issue, in the context of REDD+'s wider objectives of improving access to sustainable

energy and meeting climate mitigation commitments.

In 2014, the Abrupt Changes in Ecosystem Services and Wellbeing in Mozambique (ACES) project conducted in-depth socioeconomic and biophysical research in Mabalane district, Gaza province, a charcoal production hotspot that supplies fuel to Maputo. The study involved seven villages that were at different stages of charcoal production: boom, pre-boom and post-boom. Using a vertical value chain analysis, we identified and characterised existing charcoal supply models — from rural production to urban marketing — and different actors' roles. We also examined profit distribution along the supply chain, analysing price margins, expenses and volumes handled.

We collected data through focus group discussions with charcoal producers, semi-structured interviews with village leaders, charcoal association and village committee

## *ACES' ongoing research analyses how equitably villagers benefit from revenues created at village level.*

members and a household survey with 80 per cent of households in the seven villages. We interviewed various actors in the supply chain, including workers at charcoal production

camps, truck drivers transporting charcoal from Mabalane to Maputo and district forestry technicians. We also reviewed licensing documentation (2009–2014) from the Provincial Services for Forestry and Wildlife (SPFFB).

The findings of our research on the Mabalane–Maputo charcoal supply chain reinforce the need for integrated interventions that address forest management issues, while ensuring efficient production and sustainable procurement.

### **Forest legislation: charcoal rights and obligations**

Mozambique's Forest Law (1999) states that anyone involved in commercial charcoal production needs a licence. Local and external residents can apply individually or collectively through local associations. The producer must identify the harvesting area and consult with the community to establish boundaries and negotiate potential benefits. They must also pay a licence fee — 75MZN (US\$3) a sack — to the SPFFB at the Provincial Directorate of Agriculture and buy a transit licence to transport up to 1,000 sacks of charcoal to market each year. The transit licence is the main law enforcement monitoring instrument along the transportation routes. The state shares 20 per cent of licence fees with the community where harvesting takes place.

### **Charcoal production in Mabalane**

Between 2009 and 2014, the number of associations remained stable but the volume of charcoal production licensed to them decreased by 90 per cent. Over the same period, individual licence holders increased

from 97 to 156, with little change in the total volume licensed to them (Figure 1).

### **Supply chains on the Mabalane-Maputo route**

Our research identified two main charcoal supply chains (see Figure 2):

1. Mainly unlicensed, small-scale village production selling to wholesalers. More than 76 per cent of households in the seven villages produce an average of 126 sacks of charcoal per household in the agricultural off-season each year. These local producers have an average exploitation area of 2.5 hectares. Most do not hold a licence, and 91 per cent sell to licensed urban wholesalers. The local selling price varies from 250 to 300 MZN (US\$8–10) per sack.<sup>2</sup>
2. Large-scale production and commercialisation run by licensed outsider operators. More than 80 per cent of licence holders are non-residents. They are mostly urban-based men who set up production camps in community woodlands and transport the charcoal to urban markets in Maputo, where they sell for 900 MZN (US\$30) a sack. These outside operators pay communities as much as 25,000–30,000 MZN (US\$800–1,000) for a five-year exploitation period, and have an average exploitation area of 359 hectares.

### **Understanding and compliance with forest legislation**

Our study found that individual licence holders do not always exploit the forest areas allocated to them. Instead, they rent part of their licence to wholesalers, who use it to buy charcoal from different communities. This illegal practice is subject to a heavy fine of 20,000 MZN (US\$670). It creates a discrepancy between the licensed and actual exploitation areas, and means that local communities lose out on their proportion of the licence fee.

The low number of forest inspectors and the high number of licences issued have a negative effect on monitoring and law enforcement. Truck drivers reported that bribery was the norm at checkpoints along the charcoal transportation route. For 200–1,500 MZN (US\$7–50), officers will turn a

#### **Box 1. Project aim**

Abrupt Changes in Ecosystem Services and Wellbeing in Mozambique (ACES) is a three-year research project implemented by the University of Edinburgh in partnership with Mozambique's Eduardo Mondlane University, IIED, the University of Zimbabwe and Sweden's Lund University Centre for Sustainable Studies. ACES aims to produce new knowledge of the dynamic links between land use change, ecosystem services and the wellbeing of the rural poor to help policymakers and practitioners find ways to better manage Mozambique's woodlands and alleviate rural poverty.<sup>1</sup>

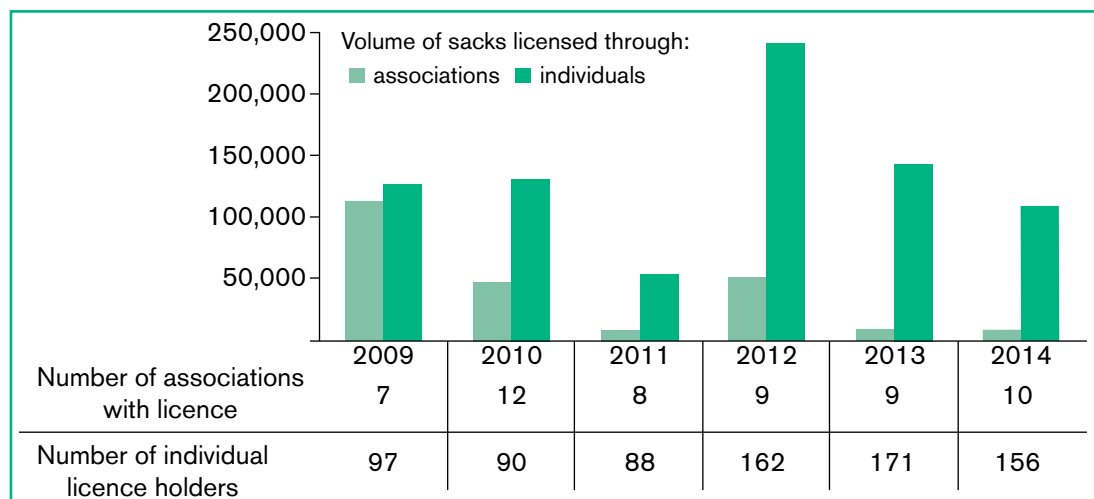


Figure 1. Annual licensed charcoal production in Mabalane

blind eye to irregularities such as overloaded trucks, discrepancies between licensed and actual exploitation areas and unstamped licences, which can be consequently reused. Less than 10 per cent of the charcoal sold on urban markets is produced according to forest law.<sup>3</sup>

Local people are badly informed about their legal situation. Most local producers do not hold individual licences — because they do not understand the process, cannot afford the high transaction cost or want to avoid bureaucracy. Local producers stated that they do not always hear about the district-level annual meetings where the authorities allocate forest areas to charcoal operators.

The 20 per cent share of licence fees for local villages does not work transparently. Although most villagers knew they had a right to 20 per cent of the licence fee, they were not aware of where the money had been allocated or invested. Either the government is not channelling the funds or a limited number of people are benefitting from these payments. Whichever is the case, local communities are disenfranchised.

Local associations are becoming less relevant in the charcoal trade, for a number of reasons. With more outside operators controlling access to market, local producers no longer need the associations' commercialisation channels. A 2012 increase in the licence price from 30 to 75 MZN (US\$1 to 2.50) per sack coincided with a decrease in tree availability and thus charcoal production rates in most villages, rendering association work economically unfeasible. And in villages with enough forest resources and high charcoal production, the official limitation of 1,000 licensed sacks per association-nucleus a year has considerably restricted association work.

### Profit distribution: winners and losers along the value chain

Figure 3 shows that outside operators — who act as producer, transporter and wholesaler — had the highest margin per sack. Wholesalers, with the second highest margin per sack, earn the highest monthly income. Buying charcoal from different producers and using multiple licences, they also trade the highest volume. Local producers have the lowest margin, volume and income.

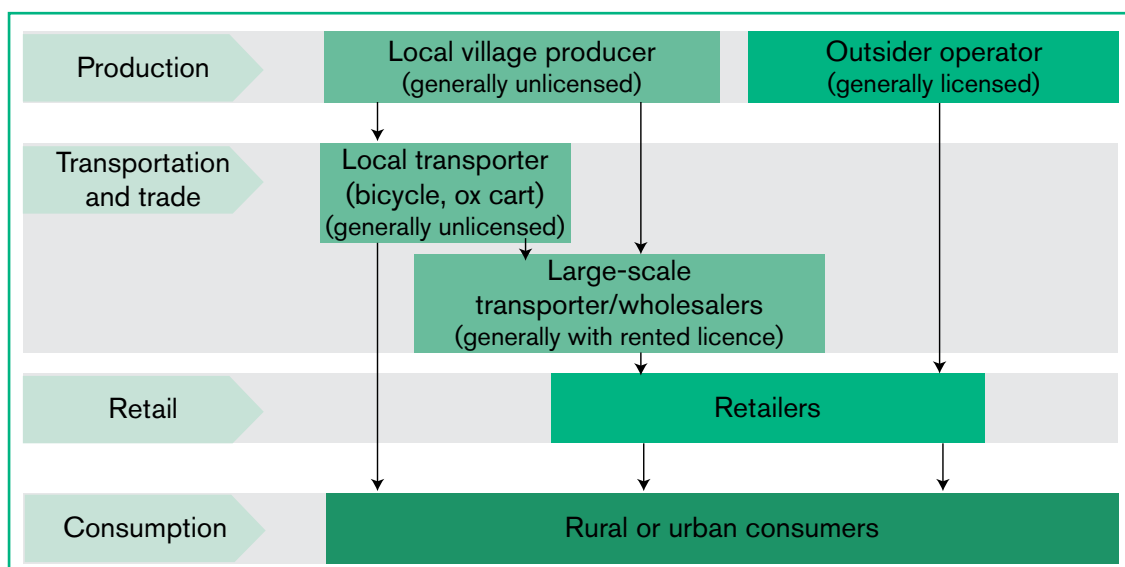
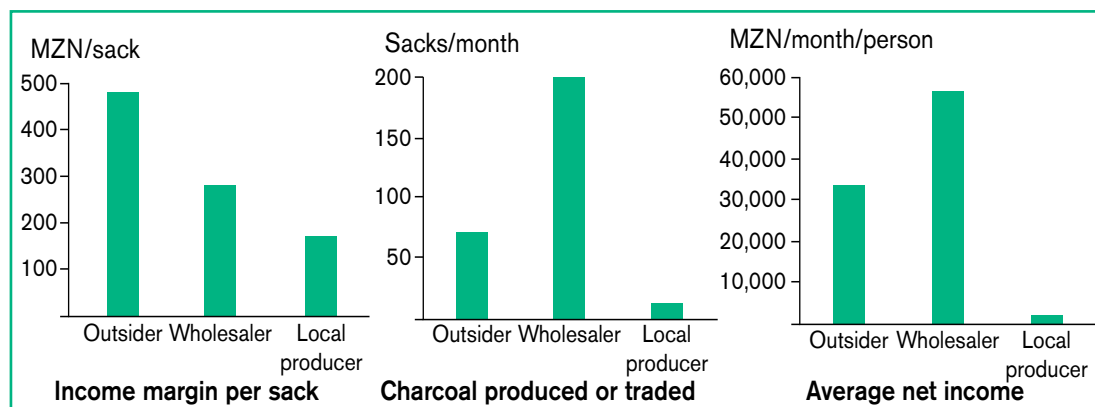


Figure 2. Charcoal value chains in Mabalane



**Figure 3. Monthly income from charcoal production**

The outsider supply chain is run by operators who do not live in the production area. More than 80 per cent of charcoal workers are from Inhambane province and live in the camps that are largely independent from village economies. As a result, they do not spend their salaries in the communities where they extract the wood.

The negative effects and costs of charcoal production to local communities are not offset by the revenue they receive from it, so they are economically and ecologically disadvantaged. Our research suggests that only eight per cent of revenues from the outsider supply chain stay in the local area — and this is when production is legally licensed, the outside operators make the correct contributions to the village and the community gets their 20 per cent share of the licence fee. Where production is unlicensed, the figure is much lower. Local village associations commercialise only five per cent of officially licensed charcoal. But in these cases, local producers are involved in the value chain and up to 45 per cent of total annual revenue stays at community level.

## Conclusions and recommendations

Our study findings indicate that fully integrated large-scale operators from urban areas are driving the charcoal boom and forest exploitation in Mabalane. We also found that most of the profits generated through charcoal production leave the communities, and that fragile or absent organisation and weak commercialisation capacities in these communities hinder their integration into the value chain.

To improve the distribution of total profits along the value chain and give local communities greater control of forests, we recommend that policymakers and other actors:

- support the development of strong local institutions for charcoal commercialisation and forest resource management
- provide information to villagers, district and central government actors about their rights, responsibilities, obligations and management options around charcoal production, trade and use
- strengthen law enforcement in forest areas and along transportation routes
- ensure transparency in charcoal trade monitoring
- increase control over licences and taxation (this particularly applies to the Gaza SPFFB), and
- prioritise the development of affordable alternative energy sources in urban areas to make charcoal less relevant and reduce its demand and supply.

Biomass energy is critical to communities in Mabalane, where agricultural productivity remains low and farmers rely on charcoal production during the dry season and in crisis periods. Increasing agricultural extension services for small farmers, improving access to new technologies, reinvesting earned charcoal revenues and promoting alternative income activities may also help reduce local communities' dependence on charcoal production.

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## Knowledge Products

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This research was funded by Ecosystem Services for Poverty Alleviation (ESPA), a seven-year, £40.5 million interdisciplinary research programme funded by the United Kingdom's Department for International Development (DFID), Natural Environment Research Council (NERC) and Economic and Social Research Council (ESRC), as part of the UK's Living with Environmental Change partnership. ESPA's goal is to ensure that, in developing countries, ecosystems are being sustainably managed in a way that contributes to poverty alleviation as well as to inclusive and sustainable growth. See more at: [www.espa.ac.uk/about](http://www.espa.ac.uk/about)



## Notes

<sup>1</sup> For more information on the ACES project, visit <https://miomboaces.wordpress.com>. / <sup>2</sup> At the time of research, the exchange rate was US\$1 = 30 MZN. / <sup>3</sup> Cuvilas, C A *et al.* 2010. Energy situation in Mozambique: a review. *Renewable & Sustainable Energy Reviews* 14(7): 2139–46.