From *laissez-faire* to organized groups – A short history of sustainable charcoal producer associations in Kenya and Zambia

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This publication is part of a series of briefs describing findings from the EU-funded Governing Multifunctional Landscapes Sustainable Woodfuel project, which aims to contribute to knowledge, options and engagement for more sustainable woodfuel value chains across Sub-Saharan Africa.

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Key lessons

- Charcoal production in Kenya and Zambia has traditionally been informal, particularly in poor rural communities with few or no other income-generating options.

- In recent years, with support from the GML sustainable woodfuel project and partners, as well as government policies, charcoal producers have organized into associations.

- Environmental benefits of this organization into charcoal producer associations can be seen through the increased adoption of improved kilns, initiation of tree planting and regeneration activities, and awareness-raising and peer-to-peer monitoring and/or knowledge exchange.

- Socioeconomic benefits of associations include higher incomes for producers, greater participation of women including in leadership positions, and better compliance with government regulations, as reflected in increased revenues for county governments from licensing fees.

- Adopting a unified approach is key to ensuring the development of a more sustainable charcoal value chain, including transparent, consistent and coordinated regulatory institutional mechanisms that incentivize compliance as well as penalizing unsustainable practices.

Introduction

A snapshot of charcoal production in Kenya and Zambia

Charcoal production is often associated with poor rural communities that have few alternative sources of cash income. It is one of the highest income-earning forest products in Kenya and Zambia and a major energy source, contributing to more than 70% of domestic energy in both countries. However, charcoal is mainly produced illegally in both countries, and most charcoal producers lack a platform for sharing challenges and ideas with one another. One misconception about charcoal is that it always leads to environmental degradation, prompting some governments to impose blanket bans on all production. The creation of charcoal producer associations aims to address this by promoting sustainable charcoal as a green energy source. This brief gives an overview of the development of charcoal producer associations in Kenya and Zambia, with key lessons learned from the Governing Multifunctional Landscapes (GML) Sustainable Woodfuel project, in collaboration with the Forest and Farm Facility (FFF).

In Kenya, charcoal production occurs mainly in remote communal lands or forests with few or no land governance regimes, and producers must often find charcoal from any available source – whether legal or illegal – to meet their daily needs. The subsistence nature of charcoal production and lack of legal and institutional support has not given producers any incentive to organize into associations. The country’s energy sector is highly dependent on biomass, with woodfuel (firewood and charcoal) accounting for around 69% of the total primary energy consumption. Around 55% of this is derived from farmlands in the form of woody biomass, crop residues and animal waste, and the remaining 45% comes from forests (Ministry of Energy 2018).
Kenya’s charcoal subsector is one of its most important sources of livelihoods, employing as many as 66% of rural households in some areas (Angelsen et al. 2014) and contributing over 50% of the income of charcoal-producing households. In 2013, around 640,000 people were formally or informally employed in the subsector and its market value was estimated at USD 1.6 billion, having registered 25% growth in jobs and 150%–321% in market value within a period of 13 years (MENR 2013a). During the same period, national charcoal consumption grew from an annual rate of 1.6 million tonnes (Mutimba and Barasa 2005) to 2.5 million tonnes by 2009 (MENR 2013). Around 40%–75% of this charcoal is produced in the country’s arid and semi-arid lands (KFS 2017 , Iiyama et al. 2014), where populations have few or no other sources of income.

Charcoal production usually involves all members of the household – men, women and children. Whereas charcoal is produced on privately owned lands in Kitui county, in the Marigat sub-county of Baringo county it is produced on both private and communal lands from the invasive Prospis juliflora shrub, also known as mesquite, to control its spread. Overall, 44% of charcoal is produced from producers’ land and 38% comes from private land (Mutimba and Barasa, 2005). Production of charcoal also occurs on ranches, with resource consent granted by ranch managers at an agreed monthly price (MENR 2013b).

In 2018, the Government of Kenya imposed a 90-day moratorium on timber harvesting in all public and community forests as a response to widespread drought as rivers, streams and wells dried up. Days before, Members of the National Assembly Environment and Natural Resource Committee had made the case for banning logging to save the ‘water towers’ – forested mountains that contain the sources of major rivers and lakes that supply cities and recharge the ground water table. The moratorium has since been extended several times, despite complaints from sawmillers and merchants of timber products about its impact on job losses. Its impact on charcoal producers is explored below.

In Zambia, woodfuel (including firewood and charcoal) provides more than 70% of people’s energy needs, and most charcoal producers live in rural forest-dependent communities with access to traditional lands. However, charcoal is also produced in woodlands and forest areas that have been cleared for agriculture or settlements. According to Zambia’s Ministry of Energy (Republic of Zambia, 2019), 84.5% of rural households use firewood for cooking, but only 13.2% use charcoal. In urban areas, 59.1% of households use charcoal for cooking, while only 6% use firewood. Factoring in the energy losses arising from converting wood into charcoal, the contribution of charcoal to the country’s total energy consumption is 11%, putting it at the same level as electricity and petroleum.

Policy regulation regarding charcoal production and trade in Zambia does not support sustainable business development. In the energy sector, multiple government actors hold different responsibilities along the woodfuel value chain: the forestry department is responsible for charcoal production, the local government for trade and the energy department for energy regulation, including charcoal – and there is little coordination among them. Producer groups hold a limited role in the regulation of woodfuel.

To discourage illegal wood harvesting, the Government of Zambia increased the cost of wood used for charcoal production by 60% (from 108 Zambian Kwacha [ZMW] to 270 ZMW – or USD 6.60 to USD 16.50) between 2013 and 2015. During that time, the cost of a conveyance license more than doubled (from 64 ZMW or 3.9 USD to 135 ZMW or 8.3 USD). This shrank producers’ profit margins by roughly 150%, making it even harder for smallholder producers to enter the market. The result has been an increase in illegal charcoal production.

The restructuring of the forestry department has led to a lack of forest guards to supervise the charcoal production process, enabling the illegal and unsustainable production of charcoal by those trying to avoid high licensing fees and leading to a high contribution to deforestation and degradation.
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Steps to regulate the charcoal sector

For many years, the charcoal value chain in Kenya has remained informal, managed by cartels. The charcoal is often produced in remote areas and sold at a very low price to transporters, who then bring it to urban centres to sell to retailers at a profit. Thus, those who benefit the most in the charcoal value chain are the transporters and retailers; the producers earn the least and must produce more and more charcoal to support their livelihoods, thereby worsening forest degradation.

To regulate charcoal production and trade, in 2009 the Government of Kenya enacted the Forest (Charcoal) Rules, which require all producers who want to engage in commercial charcoal production to organize themselves into charcoal producer associations (CPAs). The role of the CPAs is to: (i) facilitate sustainable charcoal production by its members; (ii) ensure that members implement reforestation conservation plans; (iii) develop and implement a Code of Practice for the purposes of self-regulation; and (iv) assist the Kenya Forest Service in enforcing the provisions of the Act relating to sustainable charcoal production, transportation, and marketing (Republic of Kenya, 2009). Its enactment targeted the over 300,000 charcoal producers in the country. Those in the hotspot areas in semi-arid and arid lands were the first to be organized directly into CPAs partly because charcoal was already one of the main sources of livelihood in these areas, while producers in other areas organized themselves into charcoal producer groups (CPGs) before joining together to form CPAs. CPGs register with the Ministry of Labour and Social Protection as community-based organizations (CBOs) while CPAs register with the Attorney General (AG) office through the Kenya Forestry Service and are also charged with helping members to sustainably produce charcoal and ensuring that reforestation and conservation plans are acted upon.

Today, more than 150 CPAs have been registered in the country. They either produce charcoal individually or pool produced charcoal at a common collection centre, selling it as a group. The GML project in Kenya covers 8 CPAs in Baringo County, as well as areas affected by *Prosopis juliflora* in Marigat sub-county (6 CPAs) and Kitui County (5 CPAs). CPA membership in the country ranges from as few as 26 members to as many as 1,000 members, with sub-county level CPAs showing a higher percentage of women compared to men. In the Baringo County CPAs, however, only about 37% were women. Contrast this to Kitui County, where the divide was on average 56% women to 44% men.

Although CPAs in Kenya have been greatly affected by the current logging moratorium, they have the potential to play an important role in sustainable wood resource management and landscape restoration – if the capacity building stipulated in both the Charcoal Rules 2009 and the enacted county charcoal regulations is undertaken and members are able to develop the right skills. There have been efforts by the Ministry of Environment and Forestry to exempt charcoal production in *Prosopis*-affected areas as a way of controlling the invasive plant. The ministry formed a taskforce to develop ground rules and safeguards, with guidelines and defined roles for each value chain actor to effectively implement the exemption. A report submitted to the Cabinet Secretary foresees the production of charcoal only in *Prosopis*-affected areas during the moratorium period. Some CPAs have diversified by producing briquettes from waste wood as a sustainable source of charcoal production.
In Zambia, the government has been working with various stakeholders to find options for sustainable charcoal production and trade. On 9 and 10 December 2013, the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP) through the Forestry Department facilitated the National Charcoal Indaba in Lusaka. The meeting was coined an ‘indaba’ – meaning a gathering of stakeholders at national level and subnational levels – to underscore the serious nature of the charcoal problem, as well as the need for multistakeholder engagement to discuss the problem and reach agreement on actions and follow ups. The Food and Agriculture Organization of the United Nations (FAO) through the Forest and Farm Facility (FFF) programme has supported charcoal producers in Choma district, Southern Province to organize themselves into the Choma Charcoal Association (CCA). Members of CCA have demonstrated improved knowledge in sustainable charcoal production, and illegal activities have declined. This model drew lessons from the Kenya Charcoal Producer Association to improve the governance of the charcoal business in Zambia, where management of charcoal production areas involves traditional leadership to a greater extent than in Kenya, as highlighted by Chief Cooma of Zambia during an exchange visit with Kenyan stakeholders.
The ZNFCA is an umbrella organization that was formed in 2017 with the support of FFF/FAO. It is affiliated to the Zambia National Farmers Union, and its members are producer groups in five provinces. ZNFCA gives a voice to associations of users of forest resources – including charcoal producers – to represent their interests at the national level. It also provides support for making activities more sustainable and profitable. Members pay a membership fee.

One of the flagship projects of ZNFCA relates to sustainable charcoal production in the Choma District. The Choma Charcoal Association (CCA), a member of ZNFCA, has been supported to produce sustainable charcoal. CCA members have received training on sustainable wood extraction (e.g., cutting only certain branches of the tree, instead of the whole tree, to allow it regrow) and improved carbonization (instead of the usual kiln they now use a drum to contain the wood). The mandate of the CCA is to represent the interests of its members by advocating for a more conducive operational and regulatory environment, developing members’ organizational skills, and promoting improved practices for managing woodfuel resources, charcoal production and trade.

“Because the Choma producers are organized, they can collectively manage their tree resources and also better market their products,” said Mungwala. “Their sustainable charcoal is being sold at the supermarket chain SPAR. Although a little more expensive than other charcoal, it is clearly recognizable to customers by its ‘green’ label."

The Forestry Department has been closely involved in monitoring the advances in Choma and they are using it as a model to be replicated elsewhere in the country.

“Results have been impressive,” Mungwala said. “All provinces are now preparing to take up the Choma model.”
The Forestry Department identified 10 hotspots for charcoal production where 300 people were mobilized to organize into charcoal producer groups, which subsequently formed a district charcoal association in 2018. That number has increased to 40 groups, with approximately 700 people from all the chiefdoms of Choma, of which about 30% are women. Women have taken up an active role, including in leadership positions: in the CCA, 40% of the executive committee members are women. This initiative has been scaled up in the Mushindamo District of North-Western Province, and similar results of increased compliance to government regulations have been seen. In this district, the Forestry Department, with support from FFF, identified charcoal production hotspots and mobilized 39 groups with a total of 400 people, who then registered as an association. Hotspot areas in Mushindamo were identified by the communities using a social mapping exercise and include Shaflundu (border road area), Kingovwa (Mufukushi area), Emmanuel (Katembe, Kamalenga Kamate and Lunga river area), Kangwena (Kafusasa and graveyard area), Kyambulumina (Maumbo, Mapande, Fikobi, Mulalash and Fibanku) and Kapako (Katwemba, Kyambulumina road along Zambia National Service area).

The FFF worked with the CCA and Choma Forestry Department to develop a Participatory Guarantee System (PGS) guideline for sustainable charcoal production, which is now being piloted. The system involves developing local producers’ understanding of the sustainable charcoal production guidelines as prescribed by technical officers. The guidelines are then refined into locally relevant rules, with peer-to-peer monitoring on compliance. The Forestry Department is considering adopting the ‘PGS guidelines’ as national guidelines for sustainable charcoal production.
**Key outcomes**

**Environmental outcomes**

Promotion of more efficient kilns by the Choma Charcoal Producers Association and the Forestry Department. The Forestry Department and the CCA have been promoting three types of improved kilns, which include: (i) improved ventilation of traditional earth kilns using drums; (ii) retort kilns made of drums for production; and (iii) permanent retort kilns made of brick. There has been increased adoption of these technologies, with fewer negative environmental impacts as seen by the greater number of users in Choma. Although more incentives and awareness-raising activities are needed to increase the annual adoption rate of improved charcoal production technologies, there is now evidence of higher use of such technologies in the districts with the establishment of charcoal associations. Charcoal producers are also working with tree nursery producers and the Forestry Department on afforestation activities in degraded areas. They are encouraged to plant trees on their farmlands to use as future charcoal feedstock, and are growing eucalyptus and pines for use as woodfuel and poles for trade. Through practical trainings, charcoal producers are now engaged in the regeneration of species native to their areas by improving the management of degraded areas. Additionally, FFF is using the ‘study circle’ training methodology – a participatory training tool focusing on grassroots groups developed by the former Swedish Cooperative Centre, now called We Effect – to train charcoal producer groups in the use of PGS to monitor compliance with sustainable practices, through our partners the Zambia National Forest Commodities Association (ZNFCA) and the Cotton Association of Zambia (CAZ).

These efforts show how organized charcoal producers are becoming increasingly involved in forest regeneration and community forest management work with Zambia’s Forestry Department.

In Kenya’s Kitui County, promotion of tree planting through the establishment of tree nurseries, along with training on forest management and farmer managed natural regeneration or assisted natural regeneration, has improved producers’ knowledge of sustainable charcoal production and the environmental management of degraded lands. With the support of the Kenya Forest Service, county forest officers and environment officers, 115 charcoal producers were trained in the county. In addition, its five CPAs, with a total membership of 313 (204 women and 109 men), have planted over 7040 indigenous trees (*Terminalia pruinodes, Acacia horrid, Senna abbreviate, Senna siamea, Tamarindus indica* and *Melia volkensii*) in their farmlands – where they had previously felled trees for charcoal production. Many CPA members are also in the process of forming tree growers’ associations. These efforts are aimed at restoring degraded lands in this dryland county, which is a charcoal production hotspot.

In Baringo County, 25 charcoal producers from three CPAs in *Prosopis*-infested locations in Marigat sub-county were trained in efficient charcoal production using improved earth mound kilns and drum kilns, as well as in *Prosopis* management practices. The community trainers were able to reach 359 other producers. This was an impressive accomplishment during a year characterized not only by the national moratorium and Covid-19 restrictions on group meetings, but also by unusually heavy rains that caused flooding around Lake Baringo and Lake Bogoria, displacing target communities and submerging *Prosopis* management demonstration sites established for community learning.
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Socioeconomic outcomes

The charcoal industry in Zambia is worth 5 billion ZMW (275 million USD), or 2.3% of the country’s gross domestic product (GDP). It is estimated that charcoal production provides full-time employment for about 41,000 people in rural areas (Chidumayo 1990).

The organization of over 600 charcoal producers in Choma into over 40 village-level groups has improved the understanding and practice of sustainable charcoal production by smallholders. The formalization of these groups into an association has increased the recognition of charcoal producer associations by government as an important stakeholder in attaining sustainable charcoal production and trade. It has also increased compliance to government regulations among charcoal producers in Choma, resulting in a 150% increase in licensing fees collected by government when the association was formed in 2017.

Charcoal producers in Choma district sell about thirty 50 kg bags at rate of between 50 (3.1 USD) and 150 ZMW (9.2 USD), depending on the time of the year. CCA has increased peer-to-peer exchange of knowledge on sustainable charcoal production and trade, including among women and youth.

CPAs in Kenya have facilitated the charcoal trade by creating a seamless link between charcoal buyers and member producers, as the collection centres created within their jurisdiction make it easier for producers to pool their charcoal and for transporters to collect it.

Testing localized peer-to-peer monitoring through the PGS for sustainably produced charcoal

The Participatory Guarantee System (PGS) of monitoring and certifying sustainably produced charcoal is a basic scheme developed by the Forest and Farm Facility (FFF) programme in close collaboration with the Zambia Forestry Department in the Ministry of Lands and Natural Resources, We Effect, and the Kasisi Agriculture Training centre liaised with the Organic Agriculture global movement (Organics International/IFOAM). Pilot work in Zambia’s Choma District has developed guidelines for sustainable charcoal production validated by stakeholders and officiated by the Director of Forestry. To date, the FFF programme has mobilized 215 people in the demonstration of PGS for charcoal in Choma District.

A district-level technical team of representatives from the Forestry Department and local government authority district council, the Zambia National Forest Commodities Association, the Cotton Association of Zambia, and three traditional leaders, were trained as trainers and observers. The Forestry Department has developed a certificate for producer groups that are complying with the PGS guidelines. The Choma Charcoal Association (CCA) is in discussion with the local government authority for a designated marketplace for sustainably produced charcoal. However, one member of the association who is a trader has already started marketing sustainably produced charcoal at her stands. Radio announcements are now being used to increase awareness among consumers of the availability of sustainably produced charcoal certified by the Forestry Department.
Around 30% of the groups trained in 2019 by Kasisi Agriculture training centre have started demonstrating how to use improved kilns for charcoal production and how to select trees to harvest for charcoal. However, the higher cost of technology for sustainable charcoal is a defining factor for adoption by producers. The lack of incentives for sustainable charcoal production (e.g. removing/reducing production and conveyance license fees) is jeopardizing the full implementation of the PGS charcoal guidelines. CCA, together with the Zambia National Forest Commodities Association, is advocating for the government to provide the necessary incentives to promote PGS charcoal.

Institutional framework

Promotion of PGS for sustainable charcoal in Zambia is improving, thanks to institutional arrangements for the management of the charcoal value chain at district and community levels. PGS system monitoring is multisectoral and involves government workers based in production areas, teachers and traditional leaders to serve as witnesses for the groups that choose to follow the agreed rules of charcoal production. The formation of community PGS groups also provides peer-to-peer monitoring of producers’ adherence to the agreed rules.

In Kenya, current institutional arrangements for guiding, supporting and controlling value chain activities and actors – such as implementation of the charcoal management Act in Kitui County – can be improved to enhance the sustainability, enforcement, compliance, capacity and competitiveness of local value chains (Sola et al. 2020). There is a need to review existing legal and administrative frameworks, registration procedures and the management of the charcoal sector in Kenya.

Potential for scaling

Good governance of woodfuel value chains will only be achieved when there are transparent, consistent and coordinated regulatory institutional mechanisms that support and incentivize compliance, and penalize illegality, along the entire woodfuel value chain.

The Government of Kenya has developed an appreciation for working with CPAs as an incentive to implement sustainable charcoal production. The benefits of CPAs are evident in the increased revenue collection by county governments in Kenya in areas where associations have been formed. This has in turn led to improved collaborations between government and charcoal producers, and the development and implementation of the sustainable charcoal PGS guidelines as a national document for sustainable charcoal production.

The Government of Zambia has drafted a charcoal regulation (2021), which is currently being reviewed for final recommendation as law governing the charcoal sector. This regulation is based on CCA’s success with sustainable charcoal production and trade, as well as on the organization of charcoal producer groups and the subsequent formation into CPAs seen in Choma and Mushindamo districts, as supported by the FFF programme. The efforts to support charcoal producer groups has further demonstrated the potential of the PGS guidelines for use as national guidelines in Zambia, including in community forest management areas where charcoal production could be included as one of the sustainable businesses allowed under community forest management. The PGS guidelines provide guidance to charcoal producers for more efficient charcoal production technologies, including examples of sustainable harvesting methods and practices that allow trees to (re)grow quickly, and improved management of environmentally sensitive forest areas.
There is a need for coordinated stakeholder engagement to strengthen the capacity of the implementing entities and CPAs to adopt a unified approach to the sustainable charcoal value chain. Such efforts should be inclusive and aim to build the technical, business and governance skills of all CPAs, thereby fostering the sustainability of the sector through monitoring platforms, restoration plans, adoption of sustainable practices, knowledge dissemination and societal advancement.

The Nationally Appropriate Mitigation Action (NAMA) for Kenya’s charcoal sector will be a game changer for achieving sustainability within the sector. It aims to: (i) achieve the sustainable supply of biomass through community-based and private forest management; (ii) implement efficient charcoal production technologies throughout all CPAs in Kenya; and (iii) establish a nation-wide charcoal certification and labelling scheme for all charcoal sourced from local biomass and producers. There is also a need to invest in research and development towards realizing a sustainable charcoal value chain.

Recommendations for financial sustainability

Upscaling the application of PGS for sustainable charcoal in line with the national forest guidelines in Zambia will attract investment in the sector for certification and premium prices for compliance. Undertaking a large-scale communication and marketing campaign to promote sustainable PGS charcoal through branding of packaging to reflect certification will encourage uptake by sustainable charcoal value chain traders and final consumers. In addition, investing in more efficient and sustainable production technologies that produce higher yields will increase income for charcoal-producing households.

Existing and upcoming new woodfuel producer and trader networks can play an important role in facilitating/monitoring legal and sustainable charcoal production and trade. Clarifying group and association mandates, the benefits and responsibilities, and enhancing internal communication are also key to success.

Organizational development of the CPAs should be promoted to ensure more control over pricing, and that the proceeds of the sale of charcoal benefits the producers. Efforts should also be made to streamline the charcoal production value chain in Kenya into a more organized business entity with standards and certified processes for quality assurance, and to encourage self-policing and self-regulation and reporting by offering incentives to CPAs.

Investments in the sustainability of charcoal value chain are essential to ensuring that Kenya’s natural forest resources are responsibly managed; this includes the sustainable management of woodlands and harvesting of trees, and the promotion of efficient processing and carbonization, as important urban and peri-urban fuel sources. Improving current institutional arrangements for guiding, supporting and controlling woodfuel value chain activities and actors will also enhance the sustainability, enforcement, compliance, capacity development and competitiveness of local value chains.
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