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# Greening Zambia's charcoal business for improved livelihoods and forest management through strong producer groups



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**Forest and Farm Facility  
Country case**



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# **Greening Zambia's charcoal business for improved livelihoods and forest management through strong producer groups**

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# Introduction

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Finding ways to effectively monitor, manage and support sustainable production and trade in wood fuel, especially charcoal, is critical for countries across much of Africa today. In Zambia, the government, with the support of the Forest and Farm Facility (FFF), is exploring ways to help recognize and organize the actors in charcoal value chains, contributing to more sustainable management and improved capture of value by producers, traders and by the government. This work supports the development of Zambia's new national charcoal regulation – in line with the Forest Act of 2015 - and is providing a pilot demonstration of practical steps to improve livelihoods. The work will also help to guarantee the supply of this critical source of energy - so vital for income and food security - without destroying forests.

At present, charcoal traders mostly operate illegally as individuals and therefore they fear recognition by government and local community members. However, if charcoal value-chain players become organized and able to obtain recognition by government and the community, it could provide an opportunity for capacity building in sustainably produced charcoal while contributing to economic development. A pilot project through the FFF programme of organizing charcoal producers has already yielded positive results in the District of Choma, prompting the government to review its charcoal regulation.

The charcoal industry in Zambia is worth five billion kwacha or 2.3 percent of gross domestic product (GDP) and it has been estimated that charcoal production provides full-time employment for about 41 000 people in rural areas. Further, about 45 500 people are employed in charcoal-related sectors urban areas (Chidumayo, 1990).

Wood fuel (charcoal and firewood) is the main cooking energy source for over 90 percent of the households in Zambia, where charcoal is one of the most important sources of energy for the majority of a fast-growing population. Further demand for charcoal is expected to be driven by increases in population and the slow rate of electrification (with an average consumer growth rate of three percent (ZDA, 2014). In fact, Zambia has one of the highest population

growth rates in Africa, estimated at 2.8 percent from 1990 to 2010, and 2.4 percent from 2000 to 2010 (CSO, 2012).

Charcoal demand in Zambia mainly concerns urban centres (Chidumayo and Gumbo, 2013), with 85 percent of urban populations heavily dependent on charcoal for domestic use compared with rural areas at an estimated five percent (Kalinda *et al.*, 2008).

This increasingly high demand for charcoal has steadily pushed up production and supply. For example, between 1969 and 2015, charcoal production increased from 33 000 tonnes in 1969 to 1 392 000 tonnes in 2008 to 1 500 000 tonnes in 2015 (Kalinda *et al.*, 2008). Table 1 shows the trends in charcoal production over the years from 1969 to 2015.

**Table 1: Estimates of charcoal production and deforestation**

Year	Charcoal production (million tonnes)	Wood biomass used (million tonnes)	Estimated forest degradation (million hectares)
1969	0.33	1.375	0.017
1980	0.49	2.042	0.026
1990	0.685	2.854	0.036
2000	0.905	3.771	0.048
2008	1.392	5.800	0.073
2015*	1.50	12.605042	0.196646

Note: figures calculated from the consumption figures. Based on the figures from Chidumayo, 1997, ILUA, 2008 data, Fifth national development plan, 2006

\* National wood fuel survey. Source: Kalinda *et al.*, 2008

## Charcoal value chain in Zambia

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The charcoal value chain plays a significant role in the economy of the country in terms of employment, income generation and as a source of energy (Blodgett, 2011). The main components of the charcoal value chain in Zambia include: (i) collection or cutting of wood at the source; (ii) carbonization of wood in kilns; (iii) transportation of charcoal; (iv) wholesale/retail; and (v) consumption and use of charcoal by households or business.

# The conundrum of producing charcoal

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There are numerous problems related to production of charcoal in Zambia. One of the major problems affecting the charcoal business is a lack of clarity on tenure and user rights to land and resources, including trees. There are two land tenure systems - the customary land tenure, based on traditional land where traditional leaders hold the land as a custodian for their people; and secondly, State land where government holds the land as a public good. However, all trees on either customary or State land are vested in the hands of the president and require a permit for use; yet government has limited capacity to manage and control the utilisation patterns.

Charcoal producers harvest excessive amounts of wood and use inefficient methods of production; consequently, much less than 20 percent of biomass is converted into charcoal, resulting in large areas of forest being degraded to meet the increasing demand. Further, the government of Zambia loses potential revenue from the charcoal trade - money which could be used for sustainable forest management - because most producers and traders do not pay their required licence fees. As well, the government's Forestry Department, which has the mandate to regulate charcoal production, has limited capacity to monitor and effectively manage the charcoal value chain. In some cases, traditional leaders have made strenuous efforts to control charcoal production in their areas, at times leading to abuse of traditional leadership authority with demands for illegal fees from charcoal producers.

Some smallholder producers and traders, who have not fully understood current regulations, have lost property such as goats, cattle, bicycles and axes which have been confiscated by traditional leaders and government officers enforcing laws to control illegal charcoal production and trade. Overall, current charcoal value-chain management has driven some charcoal producers into the black economy – where they try to avoid being identified, they trade illegally and offer low prices compared to the market value in order to meet their basic financial needs. Such charcoal producers are therefore not able to access any form of capacity building for trade and sustainable production.

The Forestry Department (FD) of the Ministry of Lands and Natural Resources has the mandate for managing the forest sector in Zambia; however, it has limited resources to enforce its mandate fully, including monitoring forest resources – especially charcoal production. Conveyance and production licence fees are given to traders so they can move charcoal to market areas and trade, but there is no capacity to monitor the extent and practice of charcoal production as of time of publication of this paper. Therefore, there is a significant need for support in the charcoal value chain - especially at the production point - to ensure sustainable production and guarantee its contribution to improving livelihoods of forest-dependent families.

The Forest and Farm Facility (FFF) programme - a partnership between the International Institute for Environment and Development (IIED), the International Union for Conservation of Nature (IUCN), AgriCord and the Food and Agriculture Organization of the United Nations (FAO), and implemented with the Government of Zambia through the Forestry Department - has identified greening of the charcoal value chain as an important target for intervention. FFF - in direct collaboration with the Forestry Department, is supporting organization of rural charcoal producers and exposing them to efficient and sustainable sourcing and production.

The FFF programme has worked on a pilot basis between 2015 and 2017 in two districts of Zambia: Choma and Mwinilunga. These two were chosen because of varying levels of forestry landscape issues and existing potential partners for implementation. In Choma, the district Farmers Union had initiated activities in partnership with the Finnish Agri-Agency for Food and Forest Development, which is also a collaborating partner of FFF at both the global and national scale. Moreover, Choma is a district that has exhibited very high levels of deforestation and forest degradation due to large-scale clearing of land for agriculture production, increased demand for firewood used for tobacco processing, and high levels of charcoal production for trade along the railway line from Livingstone to Lusaka. Choma has recently been declared a provincial capital of Southern Province, leading to a growing population that is pushing up demand for wood fuel.

In a similar way Mwinilunga district was chosen because of a potential collaboration with Zambia's Forestry Department, as well as decentralised forest and other natural resource management programmes supported by the Government of Finland. In terms of the forest landscape, Mwinilunga has more undisturbed forest that is now threatened by increased urbanization in surrounding areas due to the increased mining activities and corresponding settlements. In Choma district, charcoal is produced on a larger scale compared with Mwinilunga and has also larger parts of forested land that is degraded.

Besides intervening in the charcoal value chain, the FFF programme also supports tree nursery establishments as a potential business for smallholder producers in degraded landscapes which could help to increase the supply for charcoal.



# Approaches to charcoal interventions

The Forest and Farm Facility programme's work with the charcoal value chain follows three key pillars of work, based on the following overarching goal: "Smallholders, communities and indigenous people's organizations have improved their livelihoods and the decision-making over forest and farm landscapes". This is being achieved in Zambia based on FFF's three pillars:

**Strengthen** producer organizations for smallholders, women, communities and Indigenous Peoples, to achieve business/livelihoods and policy engagement.

**Response:** Zambia's charcoal producers are being organised into producer groups and encouraged to form district networks of producers for capacity development in how best to do business sustainably and participate in policy dialogue.

**Catalyse** multi-sectoral stakeholder policy platforms with governments at local and country levels.

**Response:** Ministry of Local Government and Housing is supported in the formation and strengthening of ward development committees. These are the basic structures in the local government system for community participation in good governance and policy engagement. Charcoal producers are encouraged to work closely with the Forestry Department.

**Link** local voices and learn global processes through communication and information dissemination.

**Response:** Charcoal producers and government officers from the Forestry Department have participated in two exchange visits to Kenya, which have stimulated ideas for the charcoal business as well as participatory charcoal regulation.



Forestry Department staff giving exchange visit feedback to the charcoal producers



District charcoal network executive committee formed



Photos: ©Vincent Ziba

Forestry Department staff giving exchange visit feedback to the charcoal producers

# **Major FFF interventions**

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Charcoal production and trade is conducted across all wards or chiefdoms of Choma district. The government's Forestry Department has, through the FFF programme, identified 10 hot spots for charcoal production in which to pilot the FFF theory of change; that is, the programme's belief that well-organized producers can together pool more knowledge and resources to improve production methods and can – with one voice - participate in policy dialogue with government to become a direct interlocutor to improve the enabling environment for charcoal business in a sustainable and inclusive way.

The FFF programme has engaged with chiefs in the target areas to make them aware of the importance of mobilizing charcoal producers so as to take advantage of capacity-building opportunities and promoting sustainable charcoal value-chains. Further, the FFF programme has supported producers in forming a district charcoal association for effective policy dialogue and engagement with other stakeholders.

## **Reasons for charcoal producers to form interest groups**

- Charcoal will be recognised as a necessary and potentially sustainable business - unlike the current situation where charcoal producers are at times considered immoral and illegal;
- Value in gaining knowledge of improved and sustainable production in order to maximise benefits from the labour involved;
- Opportunities to improve their business by working together and identify supporting agencies for a sustainable and socially inclusive business development;
- Opportunities for business financing;
- To have a voice and engage with policy makers in the charcoal value chain.

## **Motivation for Zambia's Forestry Department to support organized charcoal producers and other actors in value chain**

- Clear interlocutors with local government, instead of unfriendly policing role;
- Improved monitoring of players in the value chain;

- Licences will be given to groups around hotspots;
- Rollout methods that ensure sustainability of forest resources such as promotion of the coupe-system of managing charcoal production areas which allows regeneration; this system also allows allocation of plots for charcoal production and regeneration of trees on used areas. Also improved charcoal production technologies can be disseminated more easily.
- Higher revenues due to reduced illegal activities.

## **FFF achievements and moving forward with charcoal producers**

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Zambia has revised its charcoal regulations, and an association of producer groups has been organized in Choma as a result of exchange visits by senior government officials and producer organizations arranged by FFF. The first exchange visit to Kenya was in June 2015, back-to-back with the Africa Farm and Family Forest producers' conference. A further exchange in June 2016 focused on visiting charcoal and nursery producer associations in Kenya.

This work has already resulted in a high level of enthusiasm from charcoal producers for recognition as producer groups by government, and active participation of charcoal producers in ward development committees.

Charcoal producers are showing greater responsibility in honouring government licence requirements. Choma district office has recorded a record-high value for charcoal revenues in 2016, according to reports from Humphry Nchengamwa, District Forest Officer for Choma. This is attributed to increased engagement by Forestry Department workers with charcoal producers through the platforms developed under the FFF programme.

There is also improved monitoring of charcoal production sites under the responsibility of Chief Singani, who now embraces charcoal groups, leading to peace between charcoal producers and traditional leaders in the village. Chief Singani previously banned charcoal production in his area, although illegality remained prevalent and caused conflicts among villagers and traditional leadership. Charcoal producer groups introduced through the FFF programme in

production areas now work with the local headmen in identifying suitable sites for producing charcoal and later in getting consent from the chief and receiving the necessary licences. This has impressed Chief Singani.

## Moving this work forward

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There are a number of activities that can be implemented to ensure that the achievements to date will continue into the future. As a priority, the FFF programme can support government efforts in scaling up the formation of charcoal producer groups across Zambia through the implementation of a new charcoal regulations. Governments must also be supported in boosting awareness and implementation of these charcoal regulations. Inter-sectoral, multi-stakeholder dialogues across the entire charcoal value chain should be encouraged, to discuss coordinated options for reducing greenhouse gas emissions and mitigating climate change, including through such work as making the charcoal value chain a specific component of Zambia's Nationally Determined Contributions (NDC) under the United Nations Framework Convention on Climate Change (UNFCCC).<sup>1</sup>

Support can also be given to strengthen internal governance, legalization, operational efficiency and monitoring and evaluation of district charcoal associations so that they can proactively engage in policy-making and improved collaboration among producers, as well as with government and markets.

Help can be provided to facilitate government training in sustainable charcoal production by establishing demonstration sites with improved charcoal production technologies. As well, programme assistance can help to facilitate the establishment of woodlots with fast-growing agroforestry and other natural trees by charcoal producers as future feed stock and production of certified charcoal for premium prices.

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<sup>1</sup> As of November 2016, a total of 117 parties to the UNFCCC had submitted their NDCs. In sub-Saharan Africa, 46 countries including Zambia, submitted, but few countries highlight the fact that a sustainable charcoal value chain is needed as a way forward (e.g. Rwanda and Cote D'Ivoire) and that improved charcoal kilns should be promoted and used (e.g. Burundi, Somalia, Zambia). In addition, a few countries highlight the need to promote woodlots for wood energy production (e.g. Benin, Cote D'Ivoire and Malawi).

Improved business skills among producers and traders should also be supported as this will lead to greater control of pricing and setting standards for quality control among producers. Lessons learned from pilot projects should be shared and topical studies issued. A case study on the role of women in the charcoal value chain must be developed. Work will be required to facilitate networking and capacity building among the different charcoal value-chain players for sustainable business, upward linkages and policy dialogue well into the future.



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