Women – the recurring anomaly in the charcoal sector: Gender-responsive approaches for more inclusive, equitable and sustainable outcomes

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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.

cifor.org/gml/sustainable-woodfuel
### Key lessons

- Despite evidence of female participation throughout the charcoal value chain, there is limited systematic sex-disaggregated data and gender analysis for this sector. Information on women’s participation is often embedded in scattered, small case studies and in many cases, observations on such participation lack further analysis. Given this lack of information, it is hardly surprising that gender considerations are relatively absent in national policies and interventions in the charcoal sector.

- Our experiences show that women are often present throughout the woodfuel value chain – as managers of trees and forests, as producers, transporters and traders, and as end consumers. However, due to socially constructed gender roles and relations, women and men often have different motivations, needs and vulnerabilities in relation to their engagement in the charcoal value chain.

- By adopting and consistently implementing a gender-responsive approach, considerable synergies can be identified and leveraged between more efficient and sustainable value chains on one hand, and women’s empowerment and well-being on the other.

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### Introduction

#### Women in the charcoal sector

Until recently, conventional wisdom dictated that charcoal was a male business. Studies from various African countries have documented how the heavy, dirty and often illegal work is perceived as ‘inappropriate’ or ‘unsuitable’ for women (e.g. Smith et al. 2017, Kazimoto 2015, Ndegwa et al. 2016). Yet recent evidence has begun to paint a more nuanced picture, showing that women are becoming increasingly present across all nodes of the charcoal value chain (e.g. Gumbo et al. 2013, Jones et al. 2016). In order to inform a gender-responsive approach, we reviewed existing evidence and developed a conceptual framework for addressing gender equity in charcoal value chains.

Our findings underscore the importance of meaningfully incorporating a gender-responsive approach in studies, interventions and policies pertaining to the charcoal value chain. Our conceptual framework aims to support this by illustrating how, on one hand, contextual factors and the structure of the value chain shape the extent, nature and outcomes of women’s and men’s participation, whereas on the other hand, differentiated participation influences the efficiency and sustainability of the value chain while potentially transforming local gender relations. These dynamics are further explored in Ihalainen et al. (2020).

This brief highlights some of the key lessons arising from the various approaches deployed by the project team to enhance inclusivity and equity in the charcoal sector.
How sex-disaggregated data can inform more inclusive value chain development in Kenya

The last comprehensive value chain study in Kenya was conducted by the Kenya Forest Service nearly a decade ago (KFS 2013). To develop interventions and recommendations towards more inclusive and equitable charcoal value chains in Kenya, the GML team set out to update information on value chain dynamics – this time, drawing on our gender-responsive approach.

Key insights from our work:

1. Women are indeed highly present among charcoal producers, accounting for some 43% of all surveyed producers. However, while women and men were participating in roughly equal numbers in Baringo and Kitui counties (47% and 55%, respectively), in Kwale women made up only 17% of producers. Nearly all female producers in Baringo were in male-headed households. However, two out of three female producers in Kitui were female heads-of-households, reflecting high numbers of male outmigration and the potential importance of charcoal production as an adaptive strategy for women. Meanwhile, men produce between two to three times more charcoal than female heads of households (total production volume), fetching prices that are 24% higher. Women in male-headed households tend to produce slightly fewer bags than men, but female heads of households engage in production on a more seasonal basis compared to their male counterparts.

2. Men dominate among transporters. Interestingly, while 80% of women and men producers in male-headed households reported transporting their charcoal, most interviewed female household heads reported not transporting charcoal at all, opting to sell at the production site. Such dynamics could suggest that these women are more isolated and have less access to more lucrative markets. To some extent, we expect these findings to be influenced by the charcoal ban put in place in Kitui during the time of the study. Despite the ban, production activities continued. However, as charcoal collection points were closed, women resorted to selling at production sites to a higher degree than men.
Finally, and most surprisingly, our results suggest a clear male dominance among traders and retailers. As this finding is in stark contrast with earlier studies in Kenya (e.g. Ndegwa et al. 2016), it could be explained by the moratorium placed on charcoal imports into urban areas. Indeed, female traders highlighted as key challenges the charcoal ban and harassment by law enforcement more often than their male counterparts.

How can these insights shape more inclusive value chains in Kenya? First, value chains and the policies governing them are not gender-neutral. Taking gendered dynamics into account is critical in order to anticipate the ways in which socially differentiated capacities, preferences and constraints structure women and men’s abilities to comply or cope with regulations and standards. Second, women are not a homogeneous group. For instance, female heads-of-households might face specific forms of capacity constraints that merit targeted attention. Third, targeted interventions can help address gender gaps. While our field activities were constrained by the ongoing charcoal ban, our findings informed targeted support to a number of women-dominated producer organizations on improved resource management, production and business practices.
How innovative partnerships in the Democratic Republic of the Congo can help meet women’s needs

The Compagnie Forestière et de Transformation (CFT) manages a concession of some 550,000 ha of forest area in Tshopo Province and owns a large sawmill at the entrance of the city of Kisangani to produce planks for export. This wood processing plant co-produces an estimated 6,000 m³ of wood residues annually (from 2021 onwards). These residual logs and pieces of scrapwood are used by the local population for carpentry, construction and charcoal making. The beneficiaries of scrapwood for charcoal are mainly women, who often wait outside the company gate for it to be delivered; men were said to perceive the economic returns as insufficient in relation to the required time investment. The company distributed the wood through a rotational system, where each woman was entitled to buy a day’s worth of scrapwood 2–3 times per month. Yet due to lack of coordination between the women and the company, as well as opportunities to earn some extra money through roadside scrapwood sales, women were reported to come to the company gates 3–4 days per week, 6 hours a day. They waited long hours, then collected the wood and transported it to the production sites for carbonization, with generally low wood-to-charcoal conversion rates (of around 11%). In addition, the women lacked storage facilities and thus risked having their wood and charcoal become wet during the rainy season.

As part of CIFOR’s partnership with CFT, women charcoal producers received organization skills training and support in establishing a formal association. Once the association is operational, a partnership agreement will be established between CFT and the women’s group that allows for regular and predictable delivery of wood, thus freeing up the time women currently spend waiting. Members of the women’s association were trained in more effective production techniques, allowing them to produce up to twice the amount of charcoal per kiln compared to traditional production techniques (with a wood-to-charcoal conversion rate of around 22%).

Labour costs were reported to be slightly higher with the improved technique, as it involved more careful alignment of wood. However, the women estimated this method generated 25%–30% higher profits. In order to enhance efficiency of operations, CFT has offered to allocate a plot and construct a depot next to its production facility for the women to use for charcoal production. While allowing for better storage of wood and charcoal, this arrangement will also reduce transport costs and increase profit margins.
How gender-responsive technologies can unlock synergies between women’s economic empowerment and environmental sustainability in Cameroon

Fish smoking is the main income-generating activity available to women on Manoka Island. However, it is also one of the primary drivers of mangrove deforestation. Frequent trips for fuelwood collection require considerable time and effort, and conventional smoking equipment and practices – which need up to 7 hours per batch of fish – expose these women to heat- and smoke-related health risks. In order to tackle this multifaceted challenge, the project began by: (i) supporting the organization of fish smokers; (ii) raising awareness on mangrove conservation and improved smoking technologies; and (iii) soliciting women’s priorities regarding improved smoking systems. These consultations highlighted in particular the need to channel smoke away safely and reduce heat exposure.

In partnership with the University of Douala, the project team then set up a demonstration site where an improved smoker was installed next to a conventional smoking system. On-site efficiency tests demonstrated a range of improvements. In particular, the improved brick-based smoker helped reduce fuel consumption by more than a third while cutting smoking time by 19%. However, as the soil on Manoka Island was not appropriate for brick production, bricks had to be shipped in from the mainland, resulting in high costs. So the project team, in partnership with the private company MAK TANKER, developed a metallic smoker prototype that could be assembled on the mainland, shipped to the island and ready for use on arrival. This model manages to cut both smoking time and cost in almost half – a result much appreciated by the women. In addition, the built-in oil extraction system helps to significantly reduce smoke exposure by preventing oil from dripping onto the fire.

Despite these successful pilots, effective scaling out of improved practices is constrained by the relatively high costs (about USD 2,800 for the brick-based smoker model and USD 1,500 for the metallic smoker). Yet the vast majority of the few thousand women fish smokers in Manoka are aware of the need to change their practices, from both health and environmental perspectives. Hence, the GML team is providing training to members of AFUMA – the women fish smokers’ association created under the auspices of the project and with support from Cameroon Ecology – on collective saving systems that could help generate necessary funds for scaling out improved smokers. The project is also exploring the possibility of leveraging public co-finance through the Manoka council.
In addition to projects focused on sustainable natural resource management, climate change, local governance, and development of the local economy, the NGO began work on the issue of fuelwood. To help address the problem of deforestation for charcoal production and encourage producers to acquire wood legally, they looked to an area where deforestation is rampant: the Wouri estuary near Douala, Cameroon’s largest city and economic capital. The estuary’s mangroves are rich with fish spawn and crustaceans, which help to feed the enormous appetite of the city’s rapidly growing population.

In partnership with CIFOR-ICRAF and the University of Douala, Cameroon Ecology has been mobilizing rural women on the Island of Manoka and throughout the sixth district of Douala to help protect and restore the Wouri estuary’s mangroves. They aim to develop improved fish smoking technologies and to improve working conditions for women, while also promoting more efficient stoves to reduce woodfuel consumption at the household level.

“We have come to understand that women play a very important role in this sector – both women and men,” said Ndjebet. “So we need to look at how to manage this sector with both groups in mind, as the impacts of interventions could be very positive or negative, depending on the approach.”

Cameroon Ecology is also working on the best approaches to conduct awareness-raising and training in communities, starting with a gender analysis to determine the different roles held by women and men.

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In 2000 she founded the NGO Cameroon Ecology (Cameroon Écologie), based in the city of Edéa in the southwestern part of the country. Its mission is to strengthen capacity among development actors and local communities to sustainably manage natural resources and actively contribute to poverty reduction. Throughout all of its activities, Cameroon Ecology takes a gender-responsive approach to ensure the inclusion of all community members – including rural and Indigenous women.

“Natural resources management cannot be achieved without women – nor without men,” she said, adding that for Cameroon Ecology, gender is both an institutional philosophy and an approach.

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Cecile Ndjebet is an agronomist and social forester, as well as a gender specialist and women’s leadership trainer and adviser. She holds a MSc in social forestry from Wageningen University & Research and has over 35 years of field experience.
How inclusive planning can help mitigate trade-offs in Zambia

While the charcoal value chain can provide employment opportunities for both women and men, the environmental impacts associated with charcoal production may often be disproportionately borne by women. For example, a study by Mulenga et al. (2011) found that charcoal production in Zambia had contributed negatively to the availability of mushrooms, caterpillars and other non-timber forest products that are traditionally collected by women. As with charcoal production, socially constructed gender roles mean that women and men often engage with forest resources in different ways, resulting in different environmental knowledge and priorities for restoration. As the GML team set out to support communities in initiating restoration activities to establish a more sustainable resource base for charcoal, they conducted targeted consultations with women, men and youth to identify potentially differentiated needs and priorities.

The consultations revealed clear gendered patterns in women and men's preferences regarding tree species. While men tended to prefer species suitable for timber and charcoal production, women across all sites preferred fruit trees, medicinal plants and species suitable for producing cooking utensils. In general, men's engagement with tree resources was oriented towards activities that provide quick cash, while women prioritized a more consistent availability of tree products to help meet household needs. In particular, women emphasized the critical role of non-timber forest products to help cope with environmental and economic shocks.

Information on socially differentiated needs and priorities was then used to inform the design of restoration plots. Along with general increases in biomass, women have reported higher quantities of wild fruits (esp. ‘intungulu’ or Aframomum africanum) and improved access to traditional medicines. Differentiated priorities have also been incorporated into participatory forest action plans, including provisions to protect fruit trees and regulate the use of medicinal plants. In addition, communities are forming various user and security groups to ensure the effective implementation of collectively developed action plans. Critically, the information collected through the consultations has informed a gender-responsive baseline for participatory forest management, allowing various groups within the community to track changes in the availability of their priority species.
Conclusion

Contrary to common assumptions, women in Sub-Saharan Africa play key roles in the charcoal value chain – as managers of trees and forests, as producers, transporters and traders, and as end consumers. Yet gender-differentiated needs, priorities and constraints are often overlooked in policies and programmatic interventions in the charcoal sector. Our experiences show that, by adopting and consistently implementing a gender-responsive approach, considerable synergies can be identified and leveraged between more efficient and sustainable value chains on one hand, and women’s empowerment and well-being on the other.
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