



## Does Customary Land Tenure System Encourage Local Forestry Management in Zambia? A Focus on Wood Fuel

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### Key Points/Summary

- Wood fuel production is only second to agricultural land expansion as a major contributor to deforestation and forest degradation in Zambia.
- Drivers of wood fuel production are mostly associated with poverty, unemployment, ineffective local forestry management institutions, and rising demand for wood fuel.
- Local forestry management institutions play an important role in forest management as they provide guidelines on the use and management of local forests.
- Rural development strategies need to ramp up efforts aimed at creating alternative rural employment (livelihood strategies) in order to shift labor away from wood fuel production
- Legislation, such as the Revised National Forestry Policy of 2014 and the Forestry Bill of 2015, needs to prioritize formalization and strengthening of local forestry management institutions in customary areas.
- Furthermore, legislation needs to be explicit on the roles and entitlements of local communities that guarantee local ownership of community forests.

**INTRODUCTION:** Zambia is one of the most forested countries in Africa, with about 50 million out of the 75 million hectares of total land area under some form of forest cover. However, with an estimated 250,000-300,000 hectares of forest loss per annum, the country also has one of the highest deforestation and forest degradation rates in the world (Government of the Republic of Zambia 2014; Kalinda et al. 2013; GRZ and FAO 2009). Wood fuel<sup>1</sup> has been identified as one of the major drivers of deforestation and degradation in the country (Mwitwa and Makano 2012; Syampungani et al. 2011). Reversing/slowing this trend will require the country to design and implement programs and strategies that will effectively deal with both the proximate and underlying drivers of deforestation and degradation. To achieve this, there is need for clear identification and

understanding of the main drivers of deforestation and degradation.

With over two thirds of the country's total forest area on customary land and only about 24% under state land (Kalinda et al. 2013), customary land authorities have a significant role to play in regulating wood fuel production, and local forestry management in general. However, there appears to be an under-appreciation of the role of customary land institutions in wood fuel production and, and forest management in general.

Understanding existing local forestry management institutions under customary land administration systems can shed some light on how these local forest management institutions can be leveraged to reduce deforestation and degradation from wood fuel production, and help promote sustainable local forest management.

<sup>1</sup> In this study, wood fuel refers to both charcoal and firewood as in Zulu and Richardson (2013).

Against this backdrop, this policy study had three objectives: 1) examine the socioeconomic factors that influence rural household participation in wood fuel production; 2) explore the types of local forest management interventions that have been designed by customary land administrators and their local communities; and 3) assess the effectiveness of local forest management institutions in curbing deforestation and forest degradation.

**DATA AND METHODS:** Data for this study were primarily drawn from the Rural Agricultural and Livelihood Survey of 2012 (IAPRI 2012). This is a nationally representative household survey of 8,839 households conducted by IAPRI, in collaboration with Central Statistical Office (CSO) and Ministry of Agriculture and Livestock (MAL) from June to July 2012. Household survey data was supplemented with information from focus group discussions (FGDs) held in seven communities in Mumbwa, Nyimba, and Kapiri Mposhi districts. A total of 68 participants were involved in the FGDs from seven communities, 38 of whom were male and 30 were female. Furthermore, key informant and in-depth interviews were held with stakeholders in the forestry sector.

This study combined quantitative and qualitative methods in a mixed methods approach. An econometric probit model was used to determine socioeconomic factors affecting household participation in wood fuel production and/or marketing. Further, a comparative assessment of stakeholder views drawn from FGDs, key informant, and in-depth interviews was conducted in order to deepen our understanding.

**FINDINGS:** Our econometric and qualitative analysis of household and community level drivers of wood fuel production yielded four major findings. First, household level demographics, specifically, age, education, and sex of the head are important factors affecting household participation in wood fuel production and/or marketing. Households with relatively older heads were less likely to participate in wood fuel production and/or

marketing. Furthermore, heads with higher education level are less likely to participate. This is somewhat intuitive, because education expands the possibilities for labor and employment, whereas household heads with low levels of education may be more economically vulnerable, and thus more likely to rely on income from wood fuel. Further, male-headed households were more likely to participate in wood fuel production and/or marketing than their female-headed counterparts possibly due to the drudgery associated with the activity, especially charcoal production.

Second, our results show that poverty influences households to participate in wood fuel business. This finding corresponds with other studies (e.g. Mwitwa and Makano 2012; and Chidumayo et al. 2002). Generally, results indicate declining likelihood of participation with an improvement in household wealth status and asset base. In terms of agricultural productivity (particularly focusing on maize) and landholding size, results indicate that an improvement in both attributes reduces likelihood of participation only marginally.

Third, and similar to Mwitwa and Makano (2012), our analyses indicate that unemployment is an important driver of wood fuel participation by households in rural areas. The lack of employment opportunities in rural areas is increasingly compelling more youth, even the educated, to engage in wood fuel business as an alternative livelihood strategy.

Fourth, our analyses reveal that informal and ineffective local forestry management institutions are unable to internalize the costs of forest depletion. Further, these institutions are characterized by weak/non-existent enforcement structures. Table 1 gives a summary of the existing local forestry management institutions and local community members' perception about forest outcomes in the three districts where FGDs were conducted.

Results from qualitative analysis indicate existence of forestry management rules at local level. However, these rules are informal, without any documentation or laid down

sanctions/penalties for rule-breakers. To the extent that rules of use exist these are rarely enforced due to a lack of enforcement structures.

**Table 1. Local Forestry Management Institutions and Local Community Members’ Perceptions about Forest Outcomes**

District (Village)	Local forestry management rules	Enforce-ment and compliance	Forest outcomes
Mumbwa (Tumbama)	Informal	Low	Negative <sup>2</sup>
Mumbwa (Kabwanga)	Informal	Low	Negative
Kapiri (Ndili)	Informal	Low	Negative
Kapiri (Green leaf)	Informal	Low	Negative
Nyimba (Pondani)	Formalizing	Low	Positive <sup>3</sup>
Nyimba (Luembe)	Formalizing	Low	Positive
Nyimba (Zubalinyenga)	Formalizing	Low	Positive

Source: Authors’ summary.

Although FGDs were only held in three districts, key informant interviews with stakeholders revealed that the lack of formal local forestry management institutions is a national phenomenon.

FGDs and interviews also elicited information on local community members’ perception about changes in the condition of local forests within their communities over the last 20 years. Three sites (Pondani, Luembe, and Zubalinyenga) out of the seven FGD sites, all from Nyimba district, perceive a positive change in forest conditions. In these areas, the Center for International Forestry Research (CIFOR) has been providing forestry management extension services and helping with formalizing and amending the existing rules. CIFOR has also been helping these communities draft local forestry action plans.

For these communities, the perceived change was mainly in terms of forest regeneration, and not necessarily forest cover. When asked

<sup>2</sup> Implies local community perceives a deterioration in local forestry condition.

<sup>3</sup> Implies community members perceive an improvement in local forestry condition.

to explain what led to such an outcome, the respondents in these sites pointed out that the current process of formalizing and amending existing rules, which started two years ago, helped to improve compliance with some of the existing rules, such as not cutting down trees near streams/rivers; no dry season burning, among others. In addition CIFOR has been educating these local communities on sustainable forestry management, which they indicated also helped improve compliance. A similar finding is reported in Dokken et al. (2014) in Tanzania, where the villages that reported improved forest cover and quality attributed this forest outcome to improved rules and conservation education. For the other sites, where negative forest outcomes were reported, the negative perceptions about forest condition were attributed to lack of formal local rules, education and awareness on the importance of, and management of forests, and weak enforcement structures, where these exist.

## CONCLUSIONS AND POLICY

**IMPLICATIONS:** The identified household and community level drivers of wood fuel production and/or marketing are mostly associated with poverty, unemployment, and rising demand for wood fuel. Results indicate weak, and mostly informal local forestry management institutions in customary areas, with very limited enforcement. Consequently, there is unabated access to forest resources as a source of livelihood. Further, the rising demand for charcoal by urban households as noted by Tembo, Mulenga, and Sitko (2015) adds more pressure on local forests, which in turn leads to increased deforestation and degradation. From the aforementioned, it is clear that curbing deforestation and/or degradation requires a multi-pronged approach that strengthens local institutions as well as curbing demand pressure for charcoal in urban households.

Results of this study agree with most studies in Zambia and other developing countries on the role of poverty as a driver of wood fuel production. Although poverty reduction and productivity improvement features prominently in forest conservation interventions, such interventions will have

limited impact on forest outcome if local forestry management institutions and enforcement are not strengthened. In addition to poverty reduction and enhancing agricultural productivity, rural development strategies need to ramp up employment creation to help shift labor away from wood fuel production and/or marketing.

As local institutions play a pivotal role in sustainable forestry management, forest conservation programs and strategies such as community based forest management and joint forest management as prescribed in the Revised National Forestry Policy of 2014 and the Draft Forestry Bill of 2015, need to prioritize formalization and strengthening of local forestry management institutions, and enforcement structures. In their current form, the Policy and the Draft Forest Bill place the Forestry Department as the ultimate authority and owner of forests, while local communities and their institutions would not have specific roles and entitlements that guarantee local ownership. This would potentially reduce local communities' incentives to invest in long-term forest conservation activities. Hence there is need for legislation to be explicit on the roles and entitlements of local communities that guarantee local ownership of community forests.

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