



Report on forest based micro-enterprises in the Sierra Leonean district of Koinadugu

Energy For Opportunity (EFO)
26 Aggienold St
Makama, Makeni
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This report provides an analysis of the research conducted in the Koinadugu district during June-August 2011.

For more information, contact Paul Munro, Program Manager

paul@energyforopportunity.org

+232 (0)78 466 802



Introduction

An estimated 15 million people living in sub-Saharan Africa derive their main cash income from forest related activities, such as fuelwood sales, charcoal making and small-scale sawmilling.¹ While an even greater number supplement their main household livelihoods with a variety of timber and non-timber forest products. Historically these forest communities have often been constructed as a problem for forest management, with an imperative of trying to protect the forest from them. This report attempts to break down this simplistic approach, and provides a critical examination of forest based micro-enterprises in the Sierra Leonean district of Koinadugu. It specifically examines the role and dynamics of such activities in relation to the broader local and national political economies and its implications for both local livelihoods and forest management. Subsequently the overall aim of the report is to provide a more nuanced understanding of forest based micro-enterprises in the Koinadugu district, so that future interventions are liable to have a more positive impact, both in terms of forest management and local livelihoods.

Historically, Sierra Leonean forest conservation has had two broad approaches, both of which have tended to have negative impacts on local livelihoods. After a forestry department was created in Sierra Leone in 1912, its main policy was to establish forest *production* reserves which involved excluding local populations from tracts of forests, which in turn were to be preserved for centralised governmental logging operations.² Later, during 1960s and 1970s, with the rise of forest conservation to protect biodiversity a ‘fortress conservation’ approach was adopted as it was assumed that activities by local populations (i.e. farming, fuelwood collection) was having a devastating impact on forest cover, thus local populations were deliberately excluded from conservation strategies.³ These assumptions of widespread forest destruction were generally not supported by subsequent empirical research, as well as appearing not to be the case in Koinadugu from the research conducted there by this project.

This does not mean that forest based micro-enterprises cannot or will not in future have a substantial impact on forest cover in Koinadugu future. The trade in Koinadugu has dramatically expanded in recent years, a trend that is likely to continue. And while small-scale forest activities tend to have a lesser impact than commercial operations, this does not preclude them from having bad forest management strategies. Nevertheless the most important starting point for any forest conservation strategy should be a critical understanding of how forest communities engaged with their surroundings, an understanding that should be derived from empirical research, not based on popular or historical perceptions.⁴ Such forest based micro-enterprises can be an important source of livelihood for some of the most vulnerable groups, including women, children and displaced peoples, while they can also offer a productive bricolage to help buffer communities in times of food scarcity and other societal shocks.⁵ Thus the logical place for interventions to start would be to

¹ Tapani Oksanen, Brita Pajari and Tomi Tuomasjukka (eds) *Forests in Poverty Reduction Strategies: Capturing the Potential* Tuusula (European Forestry Institute Proceedings No. 47, 2003)

² P G Munro and G Hiemstra-van der Horst “Conserving exploitation? A political ecology of forestry management in Sierra Leone” *The Australasian Review of African Studies* 32:1 (2011): 59-72.

³ R P Neumann, *Imposing wilderness: struggles over livelihood and nature preservation in Africa*. (Berkeley: University of California Press, 1998).

⁴ For example see J. Fairhead and M. Leach *Reframing Deforestation: Global analyses and local realities: studies in West Africa*. (London: Routledge, 1998).

⁵ Tapani Oksanen, et al. *Forests in Poverty Reduction Strategies*

obtain a nuanced appreciation of how these livelihoods operate so that policy and project impacts produce a positive benefit for both communities and their forests.

The research for this report focuses on the Sierra Leonean district of Koinadugu. It is Sierra Leone's largest district in terms of geographical area and has an estimated population of 265,765, which includes peoples from the Mandingo, Kuranko, Fula and Limba ethnic groups. All these groups migrated into the region from Guinea during the last few hundred years. Koinadugu has a relatively high elevation with mountains that are an extension of the Fouta Djallon highland region in Guinea. Its vegetation cover is generally a woodland savannah, which means that is comprised of mainly open canopied forest cover. It also contains some important Sierra Leonean ecological areas, including the Loma Mountains forest reserve (where Bintumani, the country's highest peak at 1,945 metres is situated), Lake Sonfon and the Wara Wara Mountains.

This report breaks down its analysis of forest-based micro-enterprise into five key wood trade commodities: Firewood, Charcoal, Poles, Boards and Timber. Each commodity has its own distinct political and social economy, although there are some broad themes that stretch across multiple commodities. First the effect of Sierra Leone's civil war (1991-2001) and more specifically the impact of the returnee population resettling in Koinadugu who brought new ideas and techniques for forest-based micro enterprise learnt in their displaced locations. Second, how all of the enterprises tend to be closely integrated with the farming cycle and harvesting techniques. And third, the importance of the road networks and proximity to Kabala in influencing the extent and nature of the trade

Firewood

Firewood production in Koinadugu has been in existence ever since pre-colonial period. During this time it was predominantly used for basic household consumption, with no specific commercial value being attached to it. This is perhaps unsurprising given the limited urbanized areas during this period, which are the natural locations for commercial trade. Relatively larger scale commercial trade has only really emerged since the end of the recent civil war, with the influx of returnees from Guinea and the rest of Sierra Leone. It developed as a practical livelihood activity to help communities rebuild their lives and harvesters are now selling a variety of different types of firewood at differing price points.

The harvesting and production of firewood in the Koinadugu District is predominantly conducted by Limba women, although a few Mandingo women are also involved in the trade. They harvest their firewood in two ways, each respectively resulting in the two main types of firewood sold in Koinadugu: farm wood (black, dirtier and lighter) and forest wood (brown, cleaner and stronger); the latter being more expensive and a higher quality wood. Farm wood is a by-product of farming and is harvested by the woman after her husband has cleared the farm bush, allowed the sticks to dry and set the land on fire. After the farm is cleared women then collect the burnt firewood, cut the wood into practical lengths and widths, and then bundled them into individual head loads. These are then generally transported to Kabala on foot for sale. Forest wood is harvested by cutting trees such as gbenge and wosseh in the nearby forest. These trees are cut about half a meter above ground in

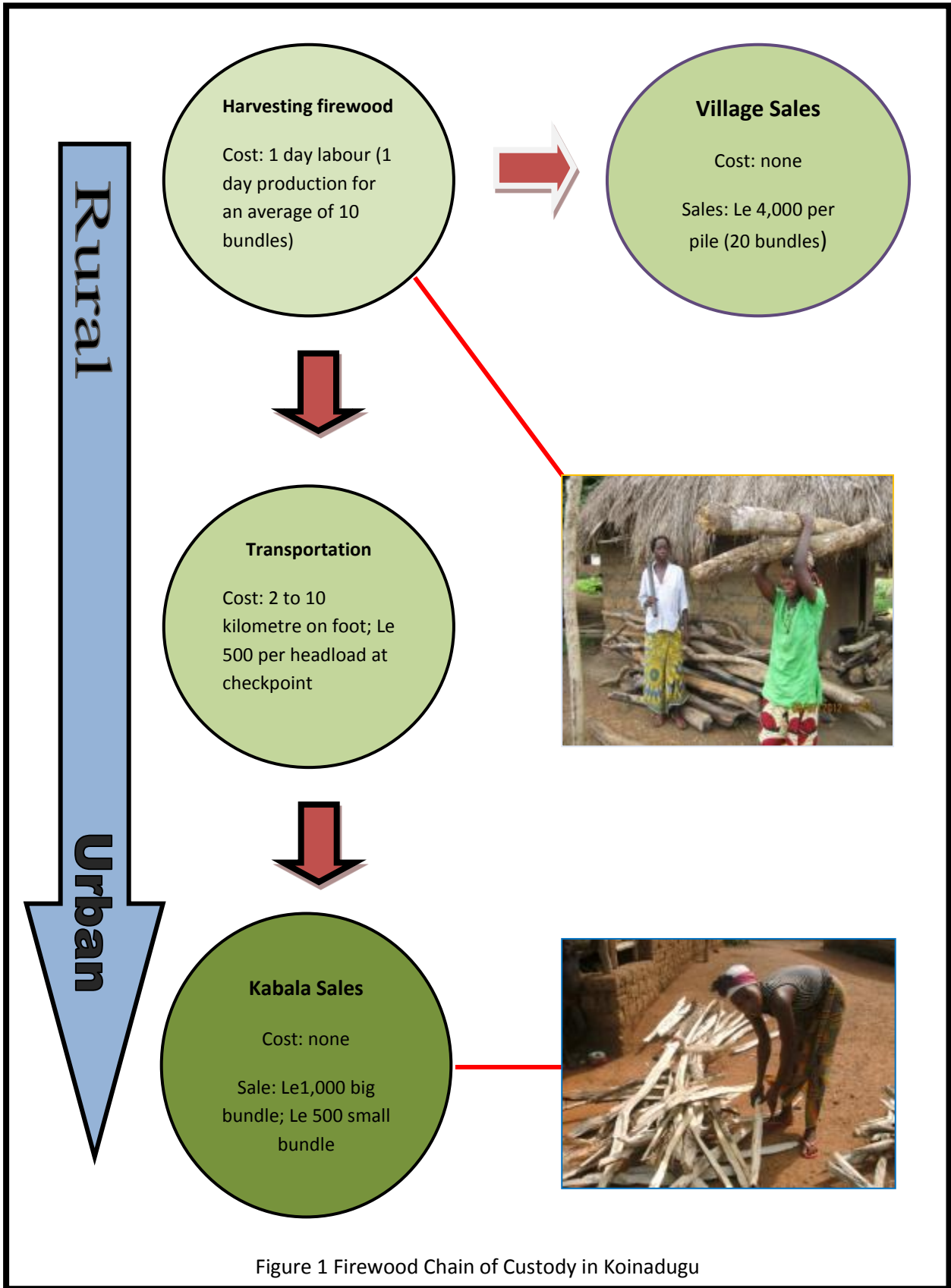
order to not destroy the roots, allowing regrowth to occur (i.e. coppicing).⁶ In a couple of villages, girdling (ringbarking) is occasionally used, where the tree is killed with strategic cuts around the trunk. Six to eight months after girdling, branches are then collected from the dead tree and transported to the village where they are bundled into various sizes before being taken to Kabala. People generally have a preference for forest wood which is cleaner, more flammable and has the ability to last longer, although farm wood has a higher volume of sales due to its cheaper price point. Beyond household sales, forest wood is also in demand by bakers and local restaurants.

Transportation is the same for all villages, in the mornings one can witness women and sometimes children carrying bundles of firewood on their heads, walking towards Kabala. All the villages in the Koinadugu district sell their firewood in Kabala town from various entry roads such as the Makeni highway, the Bafodia-Kabala highway, the Guinea-Kabala highway and other surrounding villages leading to Kabala town. Some firewood is also sold along the Makeni highway to passing trucks and taken onwards to Makeni. On entry to Kabala, these producers and vendors have to pay Le 500 per headload as market dues to council officers. A headload contains four to ten smaller bundles depending on the amount the individual can carry. The distance they cover ranges from two to ten miles to Kabala. Once in town, these women split their firewood into smaller bundles that are sold at Le 500 (4 to 5 sticks) and Le 1,000 (8 to 10 sticks). The firewood vendors do not have any constant customers, and sales generally fluctuate on a daily basis. Also, the women cannot stay too late in Kabala, as they have to return to their villages to prepare food for their husbands. During the wet season, vendors within Kabala town struggle to get supply since this is the time of their main farming activities. Between May to November, harvesters in Koinadugu are engaged more in forest wood (rather than farm wood) production as they do not enter into their farms to harvest. That is why there is high demand for forest wood during this time as it remains the only available product and it also tends to burn better when wet. Firewood selling was seen by a lot of the vendors as an important way to help their households in terms of providing food and paying their children's school fees.

There are a lot of different forest reserves that exist within these communities, which include family forests, communal forests and secret society forests. Some communities also have forest reserves that they have developed with PAGE. In general most of these communities' practices swidden farming and use their family forest as their major harvesting point of wood. A few communities are also involved in afforestation programs introduced by forestry officers and NGO staff operating in the district. These afforestation programs are conducted in a variety of ways. Some communities conduct tree planting, while other communities use coppicing techniques with trees such as the gbenge, wosseh, and yemani to help regrowth after harvest. In most parts of the district, villagers who are mainly involved in firewood production stated that they had not witnessed major deforestation, or if they had, they often blamed it on timber and board producers not their own harvesting of wood for firewood.

The firewood business within Koinadugu district has a lot of challenges as all of them express similar concerns ranging from production, transportation and sales of their produce. All the firewood

⁶ A E Nyerges has conducted some interesting research on coppicing techniques in the nearby Susu area of northern Sierra Leone: see A E Nyerges "Coppice Swidden Fallows in Tropical Deciduous Forest: Biological, Technological, and Sociocultural Determinants of Secondary Forest Successions" *Human Ecology* 17:4 (1989): 379-400.



vendors in the Koinadugu District complained about the long distances they had to travel on foot in order to sell their firewood in Kabala Town. They all resented the Le 500 which they had to pay to council officers as market due. According to them, their respective profit margins are very small and therefore the fees represent a substantial financial burden. They also expressed anger over the way and manner in which the council officers collect these Le 500 from them as they claimed that the officials sometimes seize their firewood from them if they refused to pay. The local authorities and Chiefs expressed their support behind the idea of paying the Le 500 as revenue or market due as they claimed that these monies were going into community development funds for projects. However it was beyond the scope of this research to confirm if this was actually happening.

Charcoal

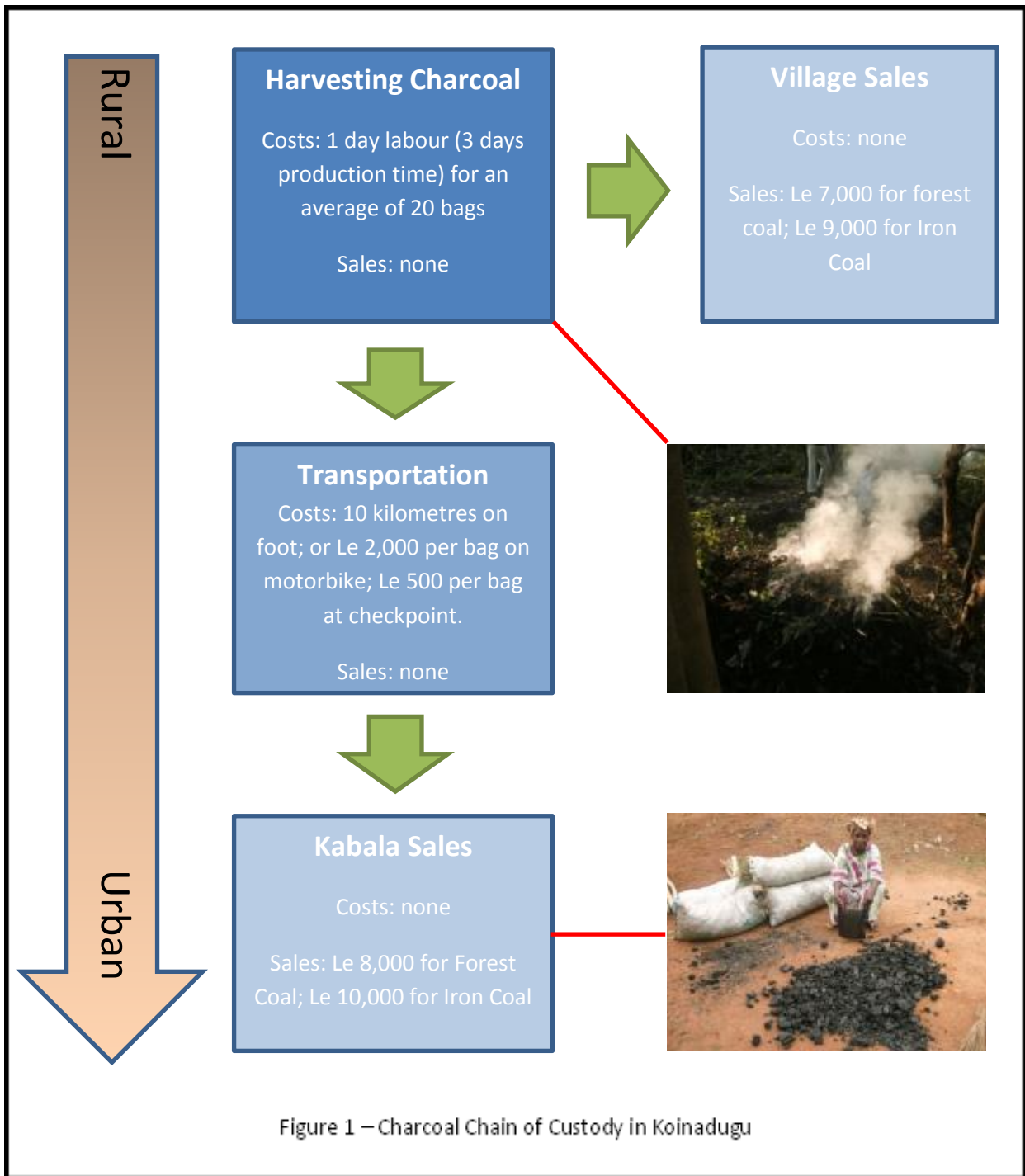
The production for charcoal has existed in the district of Koinadugu for hundreds of years, most likely arriving with Mande migrations into Sierra Leone between 1450 and 1700.⁷ Yet, prior to the civil war it was only self-produced by blacksmiths, who manufactured small metal items such as knives and farming implements. In the post-war era, the trade in charcoal has changed dramatically, in terms of how it is produced and traded. It is starting to be consumed for cooking purposes, with different forms of charcoal produced for different price points and uses. Research in the district suggests that this has largely occurred through the returnee population, who learnt new livelihood trades such as charcoal while being temporarily displaced in other parts of Sierra Leone and in Guinea, and are now sharing these skills with other Koinadugan residents. The trade appears to bring reasonable financial benefits and provides a good village level 'value adding' process for firewood trading. As the trade is very new, no major forest cover change impacts can be witnessed, however this could potentially change in future.

There are a range of different harvesting and forest management strategies for charcoal production in the district. The tree species most frequently used for charcoal in Koinadugu are Yemani (*Gmelina arborea*), Gbenge (*Ficus capensis*), Kanti (*Spondias mombin*), and Wossey. Yemani produces a (cheaper) soft low quality charcoal called forest coal, while Gbenge and Wossey trees produce a higher quality coal called iron coal. Occasionally mixtures of forest and iron coal are made. All of these species tend to have fast regenerative capacities, especially when coppicing techniques are used.

The production of charcoal in Koinadugu is generally intertwined with local farming techniques, with men, women and children all being involved in the process. Charcoal producers will often help a farmer clear his land in exchange for the sticks and trees obtained during the process.⁸ Although in some villages, charcoal producers also go into the forest to cut down and collect trees for charcoal production. These sticks and trees are then cut into smaller sizes. A round or triangular hole is then dug, which is approximately 25 centimetres (10 inches) deep and 1.5m (5 feet) wide. The

⁷ Patrick R. McNaughton *The Mande blacksmiths: knowledge, power, and art in West Africa* (Indiana University Press, 1993).

⁸ This contradicts other literature which states that charcoal is almost exclusively produced with native forests; for example see P Girard (2002) "Charcoal production use in Africa: What future?" *Unasylva* 53 (2002): 30-34



sticks are then packed into the hole, which is subsequently covered with grass and a dirt mound. Holes are made at different sides of the mound through which they can pass the fire. The burning process will last for three to four days, depending on the size and quality of the sticks used. After it has burnt down, a shovel is used to spread out the contents of the pit and then water is used to put out the fire. At this point, the charcoal is ready to be packed into bags and transported to the house. Depending on the size of the charcoal pit and the quantity and size of the sticks used, one charcoal pit will produce minimum of 8 bags to a maximum of around 30 bags of charcoal. These production sites subsequently become grounds for nursery, fruit or vegetables gardens as they tend to be quite fertile. This correlates with other research conducted in the West African region which indicates that charcoal production sites tend to have a positive impact on soil fertility.⁹

A few villages operate their charcoal production in cooperative systems. In one village, they adopt a community transporting approach, whereby families work together to transport all of their charcoal to Kabala. In another village, the production is conducted by a few older men in the village who take on apprentices, including some from neighbouring villages. Profits are shared among all those involved and they also contribute around Le 120,000 every year to a community development. While in other villages the production is often undertaken by groups of youth, who share the profits and put them towards their school fees. While women are involved in some parts of the production, it is almost solely conducted by men, this in contrast to firewood harvesting which is exclusively conducted by women.

There are a variety of different forest reserves that exist within the communities – family forests, communal forests and secret society forests - with communal and family forests generally being where the harvesting of wood takes place for charcoal. A number of communities are also involved in afforestation programs which have been spurred by previous interventions from forestry or NGO staff. For the most part, communities stated that they had not witnessed major deforestation, or if they had it was due to board production not their harvesting of wood for charcoal. Although in a couple of villages some concerns were made over its environmental impacts, namely the overharvesting of *gbenge* and *wosseh* trees, which they claim had a direct effect on localised rainfall patterns. Although there are disputes between different forests users in these villages over who has caused these impacts.

Charcoal produced in Koinadugu is generally sold in Kabala or along major highway routes, most notably the Kabala-Makeni highway. During the wet season the cost for charcoal is highest, with bags of 'forest charcoal' being sold for Le 7,000 on the highway and Le 8,000 in Kabala, while bags of 'iron charcoal' are sold for Le 9,000 on highway and Le 10,000 in Kabala. Some villages offer a discount (up to Le 2,000), if customers bring their own bag. However, many customers do not purchase whole bags, particularly in Kabala, and instead purchase a small plastic bag of coal for between Le 500 and Le 1,000. During the dry season there is less charcoal being produced, as prices drop as low as Le 5,000 due to a higher demand for firewood. Transportation of the charcoal is generally done on foot (up to 10 km) and using a motorbike. One to two charcoal bags can be carried on foot per trip, while motorbike drivers generally charge Le 2,000 per bag charcoal for

⁹ Philip G. Oguntunde, Matthias Fosu, Ayodele E. Ajayi and Nick van de Giesen "Effects of charcoal production on maize yield, chemical properties and texture of soil" *Biology and Fertility of Soils* 39:4 (2004): 295-299; Philip G. Oguntunde, Babatunde J. Abiodun, Ayodele E. Ajayi, Nivk van de Giesen "Effects of charcoal production on soil physical properties in Ghana" *Journal of Plant Nutrition and Soil Science* 171:4 (2008): 591-596.

transportation, which is usually paid in-kind with charcoal. A Le 500 fee per bag has to be paid on all charcoal transported to Kabala at a police checkpoint. The fee is supposed to go towards a community development fund. No other fees are paid by the charcoal producers.

Poles

The production for poles has likely existed in the district of Koinadugu for so many decades. However prior to the post-war era, it was predominantly self-produced for personal use. In the last few years it has started to grow as a commercial trade, with different poles being produced at different price points for different uses. It appears that the increase in the commercial pole trade has largely been driven by the returnee population (who learnt the trade during their displacement), as well the increasing demand for (re)construction work. It seems to bring reasonable financial benefits. As it is very new trade and a rotational method of production is adopted, no major forest cover change impacts can be witnessed, although producers complained of the long distances travelled to locate and harvest strong and matured sticks.

Despite the recent increases, the commercial trade in poles in Koinadugu district is still relatively limited. This is perhaps unsurprisingly given that the construction market in Kabala is much smaller compared to other district capitals in Sierra Leone, such as Freetown, Bo, Kenema and Makeni. Villages to the east (along the Kabala-Guinea highway) and north (along the Kabala-Bafodia highway) tend to exclusively supply the Kabala market, while villages to the south-east of Kabala (along the Kabala-Makeni highway) also provide some trade for vendors in Makeni and Freetown. A high proportion of the trade is conducted by youths (although some older men and women are also involved), and they tend to sell a reasonable volume throughout the year. Almost all of the communities sell their sticks by bundle that contains twelve sticks, except for one village which sold both per bundle and single sticks (retail and wholesale). The producers generally do transportation of the poles on foot (up to 10 km) from the bush to the roadside, while the vendors are responsible for transporting the poles from the roadside to their marketing centre.

Similar harvesting and forest management strategies for pole production are utilised across the district. The tree species most frequently used for poles in the district are yemani (*Gmelina arborea*) and kanti (*Spondias mombin*). Both of these species tend to have fast regenerative capacities, especially when coppicing techniques are used. Generally pole production in Koinadugu is intertwined with local farming techniques, with the harvesting of poles generally occurring within individual farm lots. Although in some villages, pole producers also go into the forest to cut down and collect trees for pole production. These sticks and trees are then cut and prepared for sale, with yemani the bark is removed and left to dry in order to reduce the weight and make it easier to transport. The harvesting site is then left for 5 to 15 years to fallow before other stick harvesting is done.

All villages operate their pole production in cooperate systems. Profits are shared among all those involved. In some villages it is shared equally, while in other villages the producer that was contracted has a greater percentage of the share, this is generally considered to be a sign of gratitude as they are the one that worked to get the contract. In one village, the producers are divided in four groups, with contracts awarded on a rotational basis, with some of the profits going towards a community fund. In a couple villages, they utilize PAGE's village saving scheme, where

each producer contributes between Le 2,000 to Le 10,000 a week. This money is then subsequently available for loans, with profits split proportionately at the end of year. In other villages, the production is often undertaken by groups of youth, who share the profits and put them towards their school fees. The women who are involved in the production often use the profits to help pay for their children's school fees.

There is a variety of different forest reserves that exist within the communities – family forests, communal forests, secret society forest, evil forest, and government forest reserves – with communal and family forests generally being where harvesting of sticks takes place. Secret society and evil forest are a form of reserve forest where secret society ceremonies take place, and only members of the society are allowed into them to do ritual ceremonies and no form of production or harvesting occurs in them. A number of communities are involved in afforestation programs, which have been spurred by previous interventions from forestry or NGO staff, and one community has a community nursery, in which they nurse seedlings given to them by the forestry division. All of the communities do rotational harvesting, and cut sticks from a certain distance above ground level (i.e coppicing), to allow regeneration as a form of forestry management. For the most part, communities stated that they had not witnessed major deforestation, or if they had, it was due to board, timber, firewood and charcoal not their harvesting of poles. There was no complaint about conflicts among producers, landowners, and other land use practisers. The allocation of land to be used for harvesting is done by the elders and farmers in some communities, while in others, the producers meet and arrange with the landowner.

Yemani is the most valuable pole for roofing as it is resistant to insects and caterpillars, as well as being easy to nail together. While kanti is stronger, more expensive and has a high durability when used in soil, and therefore tends to be used for fencing and scaffolding. Occasionally mixtures of yemani and kanti are used for high quality building construction. Demand for poles is highest in the dry season and lowest in the wet season, unsurprisingly as the bulk of building construction occurs during the dry season. A big size kanti stick is sold for Le 1,000 and smaller size Le 500 per stick, while a small size dozen of sticks are sold for Le 5,000, and large size dozen is sold for Le 10,000 in villages east of kabala. Villages along Kabala-Makeni highway sell to vendors from Makeni, and Freetown, and to customers from Kabala for construction work at a cost of Le 4,000 to Le 8,000 for smaller size bundle, Le 10,000 for bigger size bundle of yemani poles, and Le 8,000 to 15,000 for kanti poles. There have been increases in pole prices in recent times due to upsurges in fuel and food prices.

Boards

The production of boards in Koinadugu district has operated as a heredity trade for over fifty years, with hand sawn board techniques generally being passed down from generation to generation. People in the region can confirm that board production pre-dated the colonial era. However as a commercial enterprise it likely first arose along with the construction of roads in the 1950s and 1960s in the region, which would have facilitated the ease of trade. Around 40 years ago Europeans visited the Koinadugu region introducing yemani (Gmelina) seeds for community plantation, this seems to reflect a continuing government policy of introducing Gmelina (a tree from India) to help

facilitate local wood trade.¹⁰ The use of handsaws for board production came to near dramatic end after the country's recent civil war due to the introduction of chainsaws as a part of DDR programs and from Guinea. The old hand sawn techniques have not been able to directly compete with the faster chainsaws, and subsequently the hand sawn trade has ceased to exist in all but a couple of villages. The post-war period has also seen a dramatic rise in the trade of boards, particularly in relation to the increased demand for the rehabilitation and construction of buildings, along with an upsurge in urbanization rates. A related important influence has been both Sierra Leonean returnees and Guineans themselves coming to the district and bringing new techniques for harvesting and carpentry.

For the majority of communities in Koinadugu, involvement in the board trade is limited to occasional contracts. This can often be for in-village construction projects which are being funded by outside donors or NGOs. Other villages allow chainsaw contractors to come into villages and harvest from their forests. This is usually done on a contract system (used in other parts of Sierra Leone as well as in Guinea),¹¹ where the contractor gives an in-kind commission of 10% to 30% of the boards harvested to the landowner and/or the chief. There have, however, been some issues when contractors, under the permission of the Paramount Chief, have been harvesting local forests without compensation to village residents. The local communities and landowners have had no control or input on how the process takes place – meaning that they receive no benefits from the trade and the harvesting. Also it being outside their control, it is more likely to occur in an unsustainable fashion.

Boards are usually harvested between one and three miles away from the village or the road side. They are then transported to the access roads by young men and women. These are mostly family members or employed villagers who are paid between Le 1,000 and Le 5,000 to transport a board depending on where they are and how far they walk. Each chainsaw is supposed to have Le 6 million worth of fees paid for its operation each year (Le 5 million for a license; Le 1 million for registration), however only a few chainsaw owners pay all of this. Some negotiate partial payments or pay funds to their chief or organisation to take care of the registration for them. While a lot do not pay anything as they claim that forestry division lacks adequate staff to monitor their production activities. There are also a large number of producers who deliberately refused to obtain license and if caught are usually able to pay a bribe that is a fraction of the licensing costs. However, there was one case of a policeman confiscating an unlicensed chainsaw who is now using it for his own business. There appears to be a least 60 chainsaws operating across the Koinadugu district.

Yemani is the most common board produced in Koinadugu, however other boards such as Pow Pow, Lengea and Seimai can also be found in abundance in the district. One town, specialising in the board trade, harvests over ten different types of species of trees and exports to Freetown, Bo, Kenema, Makeni and Kabala. There is some fluctuation in the prices at which the boards are sold, although the most common rates are (per board) Le 18,000 for Yemani; Le 20,000 for Gbenge and Pow Pow; Le 25,000 for Seimai; and Le 30,000 for Lengea.

¹⁰ Emmanuel K Aliou *Sierra Leone* (Forestry Outlook Studies in Africa 2001); R Akindele Cline-Cole "The Socio-Ecology of Firewood and Charcoal on the Freetown Peninsula." *Africa* 74:4 (1987): 457-497.

¹¹ See J. Fairhead and M. Leach *Science, Society and Power: Environmental Knowledge and Policy in West Africa and the Caribbean* (Cambridge, Cambridge University Press 2003), Chapter 6.

Vendors from Freetown and Makeni go directly to board producing villages to purchase their boards, usually buying around 500 boards in one trip. Some vendors even come from as far as Guinea and Bo to buy boards in the district. There are lots of un-official checkpoints that need to be crossed for transporting the boards, where numerous bribes have to be paid. There are also about six board vendors based in Kabala, who purchase their stock from a variety of villages in the district. They say that business is good due to the limited competition. The harvesting of boards is an ongoing business but demand is highest from December to March (the dry season); which is the time when most construction, rehabilitation and manufacturing of furniture occurs. The trade then drops dramatically during the wet season, due to issues of road access, wood rooting, chainsaw maintenance, less overall construction and a greater focus by households on food issues and school fees.

The forest cover is reasonable in most communities, despite the large number of boards that is currently coming from parts of the district. The presence of yemani trees makes it hard to witness deforestation, as they mature and spread fast. Also the herds of cattle are indirectly beneficial to board producers, as the cows feed on the Yemani leaves and seedlings, and their subsequent manure helps to germinate the trees. Thus it is more likely that forest cover change, rather than widespread deforestation, has occurred in board producing areas of the district. Landsat analyses will be conducted later on in this research project, which will have a specific focus on trying to understand how the land cover has change in key board producing areas.

Timber

Unlike the east of Sierra Leone, Koinadugu does not have a long history with timber harvesting for export. Most communities involved in the timber trade started in 2007, when Chinese timber merchants crossed over the border from Guinea after a timber export ban was initiated there and started paying communities for their harvested timber. They were targeting high value species (mainly *Pterocarpus erinaceous* and *Afzelia Africana*) and initial operations opportunistically harvested in sparsely populated border areas and then the timber was smuggled through Guinean ports. However, within months there was an expansion of the logging deep into northern districts and commencement of shipping operations through Freetown. This sparked a national crisis. In response to the logging, the government imposed a ban on all timber exports in August 2007 in order to regain control over the forestry sector. The ban was lifted in 2008, with dramatically heavier fees introduced for logging operations and related equipment.¹² However in January 2010 the Sierra Leonean Government imposed a second timber export ban, which is still in place. The reasons for this second ban are due to the forestry division wanting harvesting operations to focus on board production and hence to increase market supply for domestic consumption. The plan is to lift the ban within the next two to three years, when domestic market saturation has been reached. Although it could potentially occur earlier as the forestry division is currently developing a verification scheme for logging operations that would naturally feed into the export sector. This is being funded as a part of the European Union's Forest Law Enforcement, Governance and Trade (FLEGT) support programme.

¹² See G. Hiemstra-van der Horst 'We are Scared to Say No': Facing Foreign Timber Companies in Sierra Leone's Community Woodlands', *Journal of Development Studies*, 47:4 (2011): 574-594.

The impacts of this banning and re-banning of timber exports were directly felt by a number of communities across the Koinadugu. Timber in the villages was purchased at Le 50,000 per log, or in some cases piles of timber were exchanged for motorbikes. This was conducted by Sierra Leoneans (outside of the village) although most of the villages suspected that these were middle-men selling the timber onto Chinese buyers in Freetown. Also apparently a law was introduced in 2009 that banned the Chinese from going directly into the forest to negotiate timber purchases, hence their use of middle-men. The 2010 ban had a massive impact and all villages involved in the timber trade lost a lot of money. Some villagers have fled, as they have unpaid debts to their customers. Others tried to transport their logs to Guinea, only to find that there was an export ban in Guinea as well. A few were caught in the act of doing this by the police and were allegedly beaten and later detained at Kabala police station. All communities want the government to lift the ban. However some stated they would be reluctant to enter the trade due to uncertainties, as it had a massive impact on producer confidence. Overall, the government's inconsistent stance on the timber trade and the rapid and unexpected nature of the bans has caused those involved in the trade in Koinadugu to become particularly embittered towards the current administration (at least with respect to forestry issues). The ban also indirectly impacted the board trade, as after the 2007-8 ban the government dramatically increased in prices for chainsaw licenses and registration.

Currently there is a short three month moratorium on the timber ban (July to September 2011), where communities are able to sell their *already harvested* piles of timber that have been sitting in limbo since the 2010 ban. Many of these piles have been burnt in forest fires, chopped up to be used as fuelwood or used to build bridges over the last year. Nevertheless there is still a large quantity of piles around and they can now be seen loaded onto trucks and being taken to Freetown. It appears that the main buyers are Chinese based in Freetown or nearby districts. The timber seems to be selling for around Le 50,000, although as one respondent noted the price also has to cover the costs of transporting the timber to the roadside which is between Le 5,000 to Le 10,000. Some communities also indicated that they would be happy to harvest new timber for potential buyers, despite the moratorium only being for pre-harvested piles.

If the ban (on new timber production) is lifted, which most are expecting to happen, there could be a dramatic rise in logging in Koinadugu. Many reported an interest in being involved in the lucrative trade in future, although no doubt some will be cautious to invest in the trade for fear of future bans. While there was no evidence of the past timber trade having a major impact on the forests of the Koinadugu, it was operating on a limited scale. Some small conflicts did arise though during the previous trade, with some inter-village disputes over access to trees to be sold to Chinese buyers. Out of the all commercial wood products traded in Koinadugu, timber has the greatest potential impact on forest cover. Particularly, as has historically been the case in Guinea,¹³ if the trade is driven by urban and foreign elites who have limited or no interest in ensuring the ongoing integrity of local forests.

Recommendations

¹³ See J. Fairhead and M. Leach *Misreading the Africa Landscape: Society and ecology in a forest-savanna mosaic*. Cambridge University Press: Cambridge 1996), Chapter 7.

Below is a by no means exhausted list of recommendations that could be adopted to improve current forest-based enterprises. As the trade is just starting to grow, now is an opportune time to ensure that outside interventions can have a positive impact. As a general rule, policies should not be aimed at widespread restrictions or banning of practices, but rather look to build on existing enterprises, helping them to be more profitable, while improving forest management techniques.

- Reduce Chainsaw fees

The current fee structure is not working. It is not discouraging chainsaw use, rather it is just promoting a range illegal activities such as clandestine logging and paying bribes. A better emphasis would be to license the actual operators (rather than the chainsaw) and ensure that they are trained in best forest harvesting practices.

- More transparency in fees collected

There needs to be better communication and transparent accounting to demonstrate to communities how the fees that are collected from them are contributing to community development.

- Storage facilities for produce

The construction of weather proof storage facilities are needed for all wood commodities, particularly during the rainy season. This is to ensure that excess stock does not rot and get wasted, as well as protecting the stock against theft.

- Promote local Associations

Associations already exist for board and timber producers. Similar associations should be established for the other forest-based micro enterprises. This will offer them greater bargaining power against issues such as fees, and will give more clout to influence broader forest policies.

- Pan-village transport cooperation

This could perhaps be linked to the formation of associations. As a broader collective reaching an economy of scale, charcoal and firewood seller could utilise motorised transportation to Kabala for their products, to reduce their on foot burdens.

- Eliminate the Le 500 fee for firewood producers

Firewood sellers operate on such low profit margins, with the fee appearing to be unnecessarily burdensome. The majority of the funds raised from these sales tend to go to household foods and education. Considering the issues that surround food security and education in Sierra Leone, such income streams should be promoted, not constricted.

- Cross village charcoal training

Identify villages with best practice charcoal making, and use these as a model for teaching other villages. If done correctly, charcoal making can have minimal environmental impacts and provide a reasonable income. Many youths engage in the activity to help pay their school fees.

- A more in depth study on the impact of Gmelina Arborea.

Gmelina Arborea is an introduced species that has been utilised in tree planting programs for over half a century now. It is used generally as a cheaper wood for most of the commodities traded. The tree tends to regrow and spread fast. However, no studies have been undertaken to understand the ecological impact of its presence in the region and how far and quick it is spreading.

- Development of clear community by-laws for tree harvesting

This will be particularly important if timber exports resume. There needs to be clear local laws outlined of what harvesting is allowed and by whom and these need to be supported and respected by the relevant Section and Paramount Chiefs. These should be defined by the communities themselves.

- Expanding village saving schemes

PAGE's village saving schemes appear to be operating well. Profits derived from trade in wood products should make some sort formalised contribution to the scheme. Once again this should be defined by the communities themselves.