

Employment in industrial timber plantations

An Ethiopian case supported by a global review

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Highlights

- Global experience of employment generation in timber plantations shows contrasting outcomes including in terms of rural development, but there are also commonalities such as poor working conditions, seasonality of employment and relatively low labor intensity over large areas compared to other land uses.
- Ethiopia conforms to this pattern, based on a case study of an industrial timber plantation, with low wages and reliance on casual jobs without formal contracts in a rural context of a weak labor market with few employment opportunities.
- Gender wise, the opportunities are uneven with a large majority of positions filled by men resulting in a marginal involvement of women, and a great potential for improvements in this field.
- Employees with agricultural land (a minority) appreciate the provision of additional sources of incomes, and the flexibility in work arrangement that allows them to simultaneously engage in agricultural activities. However, we also notice that daily labor as the main model of employment has serious implications with respect to social security and various benefits that would be associated to labor contracts.
- As the Government of Ethiopia is committed to promote afforestation and reforestation on 7 million hectares (ha) in view of making the country self-sufficient in wood, enhancing carbon sequestration and supporting green growth, these lessons would be usefully applied in the future. There are indeed great expectations that timber plantations and processing units will create significant rural and urban employment opportunities.

Objective and methods

Timber plantations play a considerable and increasing role in filling the supply gap for industrial wood products demand globally. At the same time, their expansion is heavily debated for a number of reasons, among which employment opportunities (or lack of), environmental impacts and conflicts on the land are key. So far, studies on employment opportunities created by timber plantations have provided contrasting views. On the positive side, they are assumed to create jobs that are essential and that can make a difference in poor rural areas with weak labor markets (Williams 2013). On the negative side, the poor quality of the jobs created and the seasonality of tasks are emphasized (Barlow and Cocklin 2003; Schirmer

2009). Overall, the role of plantation forestry in providing rural employment remains an important consideration for the assessment of its socioeconomic and developmental contributions. Indeed, employment prospects and improved cash income for rural people are an obvious lens through which social benefits can be evaluated.

The employment implications of the establishment of industrial timber plantations have not been thoroughly studied in Ethiopia. Yet they deserve scrutiny because poverty is prevalent in the rural areas of the country, where the majority of the population is young and unemployed (at least in the formal labor market). Closer examination will also help explore prospects for the future development of the sector.

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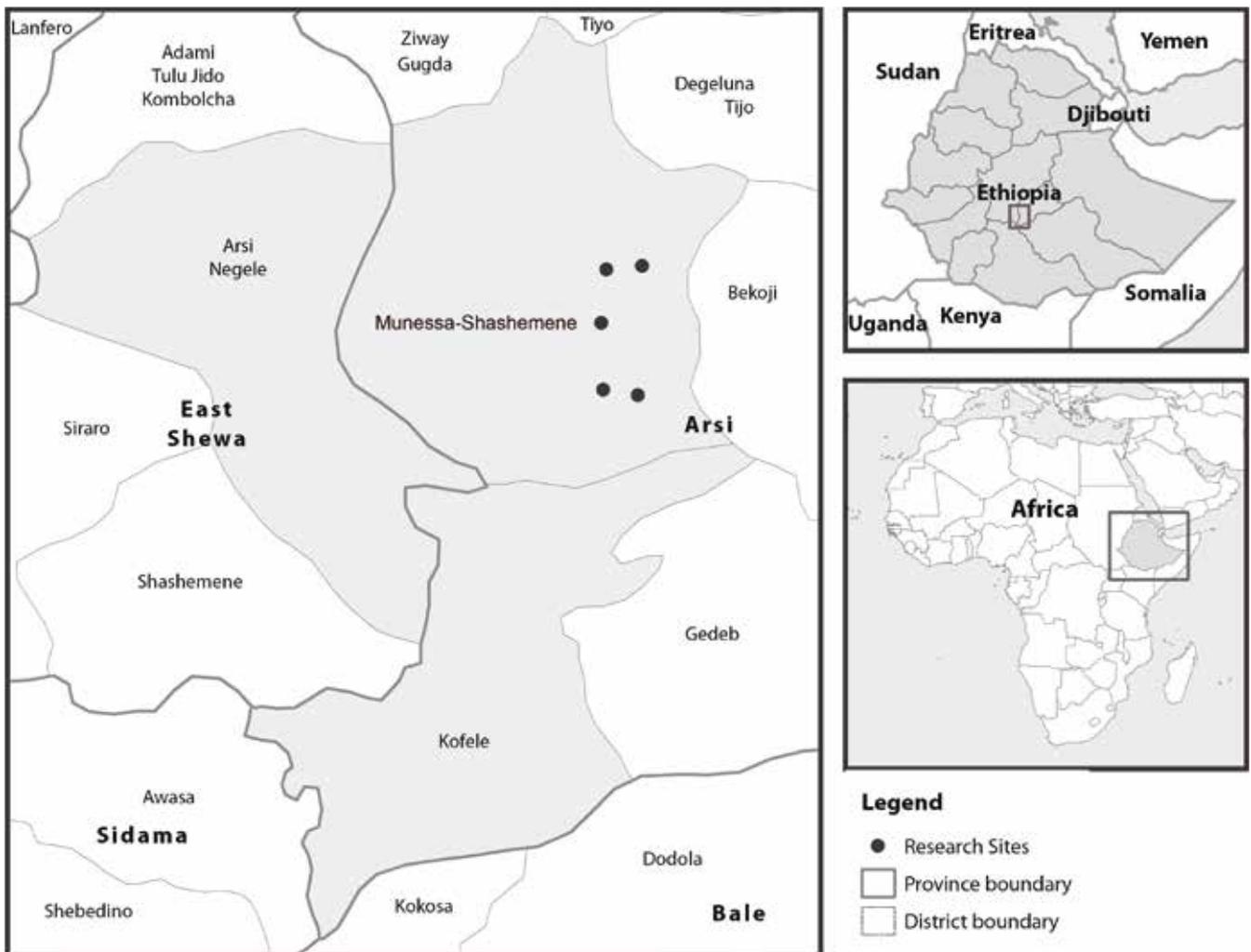


Figure 1. Study sites

We thus investigated the nature and magnitude of employment in timber plantations in Ethiopia using the state-owned Shashamane Forest and Wildlife Enterprise (SFWE), which is a branch of Oromia Forest and Wildlife Enterprise (OFWE), as a case study. We surveyed 120 workers at the enterprise (111 male and 9 female, see Table 1 to compare with the actual distribution for all workers) using a random sampling method. The survey took place in five wards (or districts) of the forest enterprise namely: Abaro, Ansawe, Bojitu, Sire bake and Sole (Figure 1). We chose SFWE for its long presence and because the company manages the second largest site of industrial plantations in Ethiopia with more than 2500 ha.

We then analyzed the empirical and primary data in light of findings from a global literature review that allowed us to identify how the issue of employment

is generally addressed all over the world. The corpus was created based on the Scopus database and search engine with a number of keywords. Although the search returned a large number of articles (270), only 53 were assessed as relevant for our research and used to conduct the literature review.

Status and trend of timber plantations in Ethiopia

Ethiopia's natural forest resources are rapidly declining. Unsustainable harvest for firewood, conversion to smallholders' farmland and clearance for commercial farming are the major drivers of deforestation (Bekele 2011). In response to the decline in natural forests, the Government of Ethiopia has engaged in establishing industrial plantations since the early 1970s. But state support to, and engagement in, industrial plantations

Table 1. Distribution of workforce at SFWE in 2014 based on gender and type of contract

	Permanent workers	Contract workers	Casual workers
Male	120 (12%)	7 (1%)	860 (85%)
Female	11 (1%)	0	9 (1%)
Total	131	7	869

Source: Compiled from the records of Shashamane Forest and Wildlife Enterprise.

were marginal between the early 1990s and 2010s. Consequently, timber plantations expanded only slowly (but faster in recent years) as demand for raw materials rose and supply from natural forests decreased. The area of timber plantations was estimated at 189,000 ha in 1990. In 2000, the area of plantation increased to 216,000 ha and in 2005 to 419,000 ha. Currently, the total area of timber plantations is estimated at 972,000 ha (Bekele 2011). Moreover, the government has pledged to reforest/afforest 7 million ha over the coming 20-30 years, including the 3 million ha included in the Climate-Resilient Green Economy (CRGE) strategy.

Three types of plantations are recognized in Ethiopia: industrial, non-industrial (woodlots) and peri-urban plantations. Industrial and peri-urban plantations are publicly owned, while non-industrial plantations are small-scale private plantations undertaken essentially by farm households. There have been good examples of industrial plantations in the country. To mention one, Munessa-Shashamane plantation was supported by SIDA and other donors such as the World Bank (Abayneh et al. 2011). It had two objectives: supplying fuelwood and reducing pressure on natural forests. Currently, OFWE and Amhara Forest Enterprise (AFE) are the two state-owned enterprises promoting the development of the sector in their respective regional states, with OFWE being the leading enterprise in the country.

Characteristics of plantation employment in Ethiopia: Field survey results

Types of jobs provided by SFWE and gender distribution

SFWE provides employment in three categories: permanent, contract (three months) and casual (daily and without formal contract). The enterprise created large job opportunities for

the surrounding communities. However, casual workers, whose number increased from 581 to 869 between 2012-14, predominate. There were 131 permanent workers in 2014, a slight decrease from 137 in 2012. The number of contractual workers remains constant yet very low (7). All workers are locally sourced. The predominance of casual workers is a consequence of the seasonality of tasks and enables the enterprise to hire in response to short-term needs.

As noted in Table 1, 98% of casual workers are men and only 2% are women (all included in our sample). All nine women work at the nursery. Among the permanent workers, 11 are women, while 114 are men. There are no women employed among the contractual workers. This gender inequality might be partially explained by the difficult working conditions where almost all tasks are manual (and dangerous with a high rate of accidents), including loading/unloading on trucks. In addition, these rural communities still tend to assign women to household affairs (collecting fuelwood, fetching water, preparing food, caring for the children, etc.).

Wages and working conditions

The majority of respondents explained their wages are too low to make savings and to invest in other economic activities. Most (81%) use earnings for home consumption, and also to cover school fees, health and personal needs (79%). The daily wage of timber harvesters, and of those working on silvicultural activities, at the nursery and as forest guards, is 17 birr per day (about USD 1). Those working at the sawmill receive 22 birr per day. Compared to other job opportunities, such as road construction that pays 35 birr per day, the wages from timber plantations are very low. It might be a consequence of equally low productivity at the plantation, but also of an anemic local labor market.

On the other hand, some of the casual workers (13%) also engage in their own agricultural activity, which provides them with their major source of cash and subsistence incomes. The workers interviewed mentioned the possibility of cultivating their own food crops as the main contributor to their local livelihoods. Hence, employment is a part-time activity that provides additional cash income. However, this applies to a small minority of workers as our survey showed that 87% of interviewees did not own agricultural land. Therefore, the plantation wage appears to be the only source of income in a vast majority of cases.

Moreover, when asked about things that should get improved at the plantation, almost all respondents found the level of remuneration too low (98%). They also reported that pay is often delayed (23%) for at least five weeks, and even though they are called casual or daily workers, they are supposed to be paid monthly rather than daily just as the permanent and contractual workers. Work conditions should also be improved, according to 66 respondents (55%). For example, we observed that sawmill workers and forest guards were not provided with any protective gear (helmets, gloves, flashlights) or lifting devices, exposing them to excessive stress and accidents. Moreover, the machines often break down; crosscut saws and axes are blunt; and handles are not properly maintained at the enterprise. Forest guards also argued for shifts because they often exceed the normal hours of work defined by the Labor Proclamation No. 377/2003 (8 hours a day or 48 hours a week). Normally, work done in excess of the standard daily hours shall be deemed overtime. Unfortunately this does not seem to apply in our case.

Stability of employment

We estimated the stability of employment at the plantation by using the number of years that casual workers have been employed as a proxy. Close to a third (29%) of interviewed workers have been working for more than seven years at the plantation, e.g. since its establishment. The main reason for staying such a long time, while still being a casual worker, is the hope of becoming a permanent worker. Other reasons are continuity in the nature of work, and the provision of a reliable, yet deemed low, income monthly. However, in Ethiopia, the transition to permanent worker is exclusively left up to the employer (Labor Proclamation No. 377/2003). Casual workers seem to be unaware of this law, or are not in a sufficiently favorable bargaining position to assert their rights. Yet 23% of the respondents are new employees, having worked less than a year. This implies the Shashamane enterprise has been

creating employment opportunities to the local community over recent years and a certain level of turnover exists.

On average, the number of annual working days of respondents is 184, ranging from 4 days to 320. When asked if they received payment for their entire period of work, 88% responded positively. Those who were not paid or paid less than expected (12%) said the foremen were mainly responsible because of their lack of good recording and reporting rigor. Besides, SFWE imposes the number of working days per month on its casual workers, i.e. 96% of respondents did not choose how many days they would be working in order to guard time for other activities; they actually want to work more.

Keeping in mind the following figures do not represent the actual number of days for each casual worker, we noted that standards supposedly applied by the enterprise depend on the activities (nursery, plantation, harvesting, sawmill), as shown in Table 2. For instance, casual labor at the sawmill must work 22 days per month and 28 days at the nursery. But those who undertake plantation management on site are paid by the task and according to the company rules. For example, the company would pay 16 days of work for 1 ha of plantation where 1600 seedlings are expected to be planted, which is equivalent to 100 seedlings a day.

Perception by casual workers of the benefits of plantation forestry

Casual workers were asked to identify the most important benefits provided by the plantation. Fuelwood is the most important benefit for 73% of the respondents because it remains the main source of energy for rural households in the community. Timber for construction is reported by 34% of the respondents; they often build houses and shades for their livestock from woods and leaves collected from the plantations.

Table 2. Distribution of tasks by activity

Activity	Nursery	Plantation	Harvesting	Sawmill
Tasks	Cultivating and maintaining plants (watering, etc.), transporting seedling to the field (occasionally)	Digging, transporting seedling to the field, pegging, pitting, planting, weeding, pruning, thinning	Felling, tapping, transporting logs to sawmill	Loading and unloading logs from truck, sorting and stacking timber, placing timber for processing on machines (manually), unloading cut timber from machines, packing and loading finished products for transportation



Casual workers digging holes to plant trees at Bojitu plantation site, Ethiopia.

Photo by Betelhem Negede.

Employment ranks high: half of respondents mentioned it as the most important benefit of the plantation. It is considered crucial for a household's economy because long-term employment opportunities are scarce in the area. We previously showed the plantation offered some stability over rotations. For instance, the construction sector offers better payment in the area, but is a short-term activity and hence not necessarily preferred by the villagers. Besides, plantation jobs are near workers' farms and residential areas.

Competition to access jobs

To assess further the performance of SFWE in creating and providing employment opportunities to the rural local communities, casual workers were asked if they had competition to access plantation jobs. About half said they were in competition for the jobs within the same village. These respondents mentioned the lack of employment opportunities within a given village, the proximity of plantation jobs to the village and the preference to work with the public sector as the main reasons for competition. Even though the pay is

better in the city, given the high cost of living and transportation, most are not willing to go that far in search of employment.

Discussion supported by a global literature review

Plantations generate employment

From an economic point of view, plantations seem to support economic development in rural areas as represented by our research site, and provide employment opportunities for local communities. In general, casual workers viewed employment at the plantation as a reliable opportunity in a context of scarce long-term employment prospects.

There are contrasting statements on employment generation by plantations in the literature. On the one hand, relative labor requirements generally depend on local dynamics (e.g. land-use trends) and type of plantation (e.g. species and products), according to

Landry et al. (2011) and Kathryn and Schirmer (2012). Moreover, Williams (2013) explains that most work on eucalyptus plantations occurs at the established stage and at the time of harvest. At other stages, labor requirements and job opportunities decline.

Pine plantations, on the other hand, require thinning and tending as they grow, apart from sometimes producing resin and therefore providing more jobs. At the local level, industrial plantations provide jobs and offer economic opportunities for rural residents who are landless, or whose land holdings are small or marginally productive (Morrison and Bass 1992); this result is similar to the findings of our case study. Since most workers do not own agricultural land, the enterprise has created job and economic opportunities, with the plantation wage being their main source of income.

Plantations enhance local livelihoods

This case study shows that plantation development offers significant non-wage benefits – fuelwood (a major source of domestic energy), non-timber forest products (NTFPs), shades to their livestock and other environmental benefits – in addition to creating employment opportunities. Therefore, plantations act as a safety net to these poor rural communities.

Similar observations were made by Schoneveld et al. (2011) who state that most households with employees in Ghana plantations reported increased income security and increased their capacities to sustain food supply, provide education for their children and cover medical expenses. Timber plantations are not widespread in Ethiopia, but there is a high commitment of the government to further develop the forestry sector in general and plantations in particular. For instance, if the 15-year CRGE strategy realizes its 2 million ha of afforestation and 1 million ha of reforestation, it will contribute to the enhancement of local livelihoods.

Complementary livelihood opportunities of plantations

In this study, we also looked at the capacity for plantations to complement other local livelihood activities. We found that the flexibility of plantation work is attractive to casual workers, mainly due to its

compatibility with other livelihood activities such as agriculture that. In other words, provides them with an additional source of income. For workers who own agricultural land, farming continues to be the main livelihood activity even if one or more household members work at the plantation. Pirard and Mayer (2009) and Schoneveld et al. (2011) made similar observations. Both studies emphasize that plantations should complement farming rather than being a substitute, since agriculture remains the core contributor to local livelihoods. If plantations can meet these conditions and others, such as recognition of local and customary rights, then they can improve the local economic conditions, even if their capacity to create jobs is relatively limited if considered per hectare (Pirard and Mayer 2009).

Generally poor work conditions with seasonal jobs

The survey showed that jobs for casual workers are low-level tasks with no prior skills required. In addition, plantation wages remain unattractive and are lower than earnings from local agricultural work or other sectors, such as construction. This situation was identified in other studies. Sinaga (2013), in his study on employment and income of workers on Indonesian oil palm plantations, revealed the situations of casual workers (who make the largest share) remain deplorable, particularly their employment status and income. Their low wages limit their access to food sold on the market. There are other cases in the reviewed literature that indicate that remunerations and working conditions might depend on the type of jobs and activity (Karumbidza 2005), similar to what was observed in our case study. While casual laborers work at the sawmill 22 days per month and earn 22 Birr per day, forest guards exceed the normal hours of work (8 hours a day or 48 hours a week) and only get 17 birr per day. Working conditions also depend on the ownership of the company. Balimunsi et al. (2011) assessed the physical workload and productivity of public and private logging companies in a timber plantation in Uganda. They found that work and living conditions were harsher, and workloads were higher, with the private company.

Conclusion and recommendations

In this study, we combined an overview of the literature on employment in timber plantations all over the world with a case study in the Ethiopian context where tree plantations are expanding. Some findings in the literature clearly diverge, mostly with respect to their contribution to the creation of jobs in rural areas and compared to other land uses. However, our study does document and confirm some trends.

The Ethiopian empirical study includes activities at the plantation and at the sawmill located on the same site, but does not include employment generated further down the value chain. It provides ambiguous results. On the one hand, the plantation and sawmill provide new jobs to rural populations in a context of high unemployment and extremely limited economic development. On the other, there are lots of weaknesses related to working conditions, low wages and the absence of formal contracts. In addition, we observed gender inequalities with almost all positions filled by men except for a handful of women working at the nursery.

Employees see work conditions and wage levels as unsatisfactory. The pay rates remained very low in part because the local labor market is extremely weak and job opportunities are rare. Authorities might address this situation, but the margin for action is likely to be very limited. This is particularly true since the plantation's very low productivity provides little room to distribute wealth.

Unsurprising but still very significant, casual workers without contracts make up most of the workforce, a trend that has been gathering strength. This has implications as these workers miss out on certain rights provided by the labor law to those with contracts. Although respondents seemed confident, this situation might not be ideal, especially with a state-owned company. Yet the policy is legal as far as the daily labor force is concerned. This situation is not specific to Ethiopia, but given major planned developments in the sector in coming years, new regulations or incentives should be put in place to avoid making the situation commonplace.

The positive side of this situation is a high level of flexibility that is appreciated by the people. Indeed, it makes work at the plantation compatible with

agriculture in neighboring villages. But it remains to be demonstrated that such flexibility would persist if higher levels of mechanization were applied to the operations and if the company had a more rational approach to management. Production is erratic and productivity is low, all of which tend to put profitability, and hence sustainability, at risk. There is, therefore, a trade-off between day-to-day operations that help a number of villagers but that might be unsustainable, and more effective mechanized operations that would probably create more inequalities.

An obvious inequality with current operations is the uneven distribution of positions between women and men. This is possibly caused by both the absence of mechanization and traditional structures of the neighboring villages that tend to reinforce this discrimination. This is a field of intervention for the government, especially in a state-owned enterprise and for the future expansion of timber plantations in the country. Women, for instance, could be trained to acquire new skills that would make them employable in larger numbers at the plantation.

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