

: Main features of the labour market and economic activity in the native timber sector in the Ecuadorian Amazon

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■ ABSTRACT

The study aims to understand the economic aspects of timber harvesting (volumes, type of wood extracted, income generated and prices) and the main labor features of the native timber sector of the Ecuadorian Amazon. The literature describes the economic aspects of this activity, but little is known about the labor market. The survey results reveal that around 90% of workers in the Simplified Harvesting plan (PMFSI) are temporarily employed and more than two-thirds work part-time, indicating job insecurity. On the contrary, 75% of the workers in the Sustainable Harvesting plan (PMFSU) are permanent employees. Salaries in the sector are above the national average and minimum wage. However, the wage gap between workers in the two plans was up to 50%, depending on the task, with a gender pay gap of up to 40%. Understanding these aspects is essential for policymaking and could contribute to the growth of the sector while generating more employment equity.

■ KEYWORDS

Native forestry, labor market, wages, Ecuadorian Amazon

1 INTRODUCTION

Ecuador's continental territory covers 24.8 million hectares (MAATE, 2017). The country is divided into three regions: (i) the Coast, (ii) the Andes (Sierra region), and (iii) the Amazon, which accounts for 47% of the total continental territory. Forests cover 51% of Ecuador's total continental area, representing 12,3 million hectares (SUIA, 2023). The Ecuadorian native forest has great importance for local population (ITTO, Status of Tropical forest management - Ecuador, 2005) since it provides a wide range of employment opportunities and income generation (Mejía and Pacheco, 2013; CEDIA, 2018)

In 2022, the forestry sector contributed 1.1% of the country's gross domestic product (GDP), accounting for USD 691.91 million (CFN, 2022). This contribution is relatively low compared to other sectors, given the country's strong dependence on oil and other traditional products, such as agriculture and fishing. Nevertheless, the forestry sector is an important source of employment (SECAP, 2014), both in the formal and informal sectors. It boosts the economy and contributes to poverty alleviation (Sanchez Calderón and Reyes Pinengla, 2015), particularly in the Amazon region, where the forest is a main source of income.

The formal forestry and wood manufacturing sector generated an average of 26 thousand jobs between 2010 and 2020; whereas, in 2020, it employed 23 thousand formal employees (INEC, 2022). However, there is limited information available regarding informal employment and the working conditions within this sector, both in the formal or informal segment. This lack of information can be attributed to the absence of public disaggregated statistics (Scholtzhauer and Torres, 2017). Particularly, there is limited data on native forest harvesting, including costs and revenues, volumes traded, among other relevant data. It is likely that this data partially exists, but remains unpublished, incomplete, and is not presented in a coherent and systematic way.

To carry out logging activities in native forests, a license must be requested from the Ministry of Environment, Water and Ecological Transition (MAATE by its Spanish acronym), which was established in response to the continued loss of forest cover since 1990 (Mejía and Pacheco, 2013; Sanchez Calderón and Reyes Pinengla, 2015). The objective of MAATE is to promote sustainable forest use, taking into consideration the forest's capacity for regeneration and adaptation to change, and the situation of the people living in these areas (MAATEa, 2022; MAATEb, 2022). The two main types of plans in force are the simplified harvesting plan (PMFSI, acronym in Spanish), where logging must be done on a single property and with non-mechanized timber skidding, and sustainable harvesting plan (PMFSU) for mechanized operations (MAATE, 2015). Both plans are valid for any size of land. In practice, small producers typically apply for PMFSI licenses, while medium and large-scale forestry operators apply for PMFSU licenses. The natural or legal person who applies for the license is called the executor and is the one who carries out the plan.

The existing literature partially analyzed the economic activity of the license holders (executors) and the limitations they encounter in their development; however, information specific to labor market in this activity remains scarce. To address this research gap, we designed a case study aiming to answer the following question: what are the main

aspects of the economic activity and labor market situation in the harvesting of native forests by executors holding PMFSI and PMFSU licenses in the northern Ecuadorian Amazon? Additionally, we analyzed what aspects could be strengthened in the native timber sector of the Ecuadorian Amazon.

■ 2 METHODS

2.1 Sample selection and survey sites

To select the executors of PMFSIs and PMFUs, we accessed a list provided by the National Directorate of Forestry of the Ministry of the Environment, Water and Ecological Transition (MAATE by its Spanish acronym). The list contained information about the program type, the license expiration date, the main location of the program, the total volume approved, and the program area for both PMFSIs and PMFSUs. Subsequently, we selected executors with valid licenses, focusing on the years 2021 and 2022. This focus was necessary as licenses are typically valid for only one year, ensuring the inclusion of executors within the relevant timeframe for the study. We prioritized executors with a higher number of licenses as it indicated greater experience and a larger workforce.

The study was conducted in two provinces located in the Northern Amazon region of Ecuador: Orellana and Sucumbíos. These provinces were selected due to their significant number of harvesting plans authorized and timber volume harvested in the last two years. Esmeraldas (northern Coast) is the third province in this regard, but it was excluded from this study due to the prevailing social and security conditions in the province during this study. For the PMFSIs, we selected 24 executors in Sucumbíos and 25 in Orellana. For the PMFSUs, we selected 5 executors in Orellana, as no PMFSUs were approved in Sucumbíos within the period selected for this study.

Once the executors were identified, we conducted face-to-face interviews using a structured questionnaire. The questionnaire consists of 26 questions, including sub-questions on productivity, pricing, marketing, infrastructure, employment quantity, employment characteristics (such as age and gender), training, and the labor situation of employees.

■ 3 RESULTS

3.1 Economic activity

The executors harvest hardwood, semi-hardwood and softwood¹, the latter being the main source of commercialized wood. Mainly because softwood species grow fast and because they are used for very common uses such as handicraft products, pallets, boxes for transporting fruit and are also used in the manufacture of MDF. PMFSI executors marketed mainly softwood and semi-hardwood planks, and hardwood beams. During the analyzed period, 15,600 m³ of softwood planks, 8,000 m³ of semi-hardwood planks, and 11,600 m³ of hardwood beams were produced. PMFSU executors commercialized mainly softwood logs (7,600 m³) and planks (1,300 m³).

¹ This is how native wood is traded in Ecuador, softwood is wood with 0.30-0.50 density, semi-hardwood between 0.51-0.80 and hardwood more than 0.81.

Table 1. Harvested volume (m³) by wood type and product under PMFSI and PMFSU, 2021-2022

Executor harvesting plan	Total Volume (m ³)	Wood type harvested	Total Volume (m ³)	Average volume (m ³)
PMFSI	42,872	Hardwood	14,994	312
		Semi-hardwood	8,630	184
		Softwood	19,248	393
PMFSU	17,065	Hardwood	2,821	940
		Semi-hardwood	2,271	454
		Softwood	11,973	2,395

The volumes harvested resulted in total revenues of USD 273 thousand for PMFSI executors and USD 1.034 million for PMFSU executors during the analyzed period (Table 2). The main difference of revenues between the two types of executors lies in the price of the products obtained, as they vary according to wood species. Pricing was one of the most problematic issues highlighted by respondents. They attributed this partly to the consequences of the pandemic, but also to the fact that timber of unknown origin is being sold on the market, which is driving prices down. To address this issue, the executors indicated several possible solutions, such as: (i) the government establishing a minimum price (suggested only by the PMFSI executors), (ii) a tax reduction, (iii) more control over the timber marketing channels, (iv) finding new customers who pay more, (v) avoiding the use of intermediaries (who take away some of their margin), (vi) increase mechanization and cost-efficiency (only PMFSUS), among others.

Table 2. Income (USD) by wood type of PMFSI and PMFSU executors, 2021-2022

Executor harvesting plan	Total income (USD)	Wood type harvested	Total Income by wood type (USD)	Average income of executors by type of wood (USD)
PMFSI	273,434	Hardwood	72,041	1,533
		Semi-hardwood	67,539	1,468
		Softwood	133,854	2,789
PMFSU	1,034,476	Hardwood	128,172	42,724
		Semi-hardwood	2,271	454
		Softwood	150,240	30,048

3.2 Employment

The labor market situation in native forest harvesting differs greatly depending on the type of license held by the executors, but both have very little female employment. In the case of PMFSI license holders, most of the employees have temporary jobs², while PMFSU holders mostly employ permanent workers. Table 3 shows that between 2021 and 2022, there were 387 temporary workers employed by executors holding PMFSI licenses in Northern Amazonia, of which only 10% were permanent. Of the 90% of temporary employees, almost two-thirds are part-time workers, which shows how precarious the working conditions are in the PMFSI schemes. Conversely, in PMFSU executors' businesses, 75% of total employees are permanent. The difference reflects that PMFIs are typically larger companies with stable economic activity.

Table 3. Total permanent and temporary persons employed by license, 2021-2022

Executor harvesting plan	Total number of employees for all companies		Weighted average number of employees per company	
	Permanent	Temporary	Permanent	Temporary
PMFSI	30	387	0.6	8
PMFSU	56	18	11	4

According to the survey data, workers in forest operations within PMFUs/PMFIs earn salaries that surpass both the country's average monthly wage based on company-level data (as reported by INEC, 2023), which was recorded at USD 304 between 2021 and 2022, and the government-established minimum wage of USD 425 per month.

The survey findings reveal that the lowest monthly salary was reported among permanent non-productive employees in PMFSU, amounting to USD 600. On the other end of the spectrum, the highest monthly salary noted in the survey was approximately USD 900 for chainsaw operators employed in both PMFSU and PMFSI. Furthermore, the survey data suggests a notable disparity in salary between permanent and temporary workers, with a gap of up to 50%. Moreover, the survey highlights the existence of a gender pay gap of up to 40%.

Although employees are paid better than the national average and the minimum wage, they are not better paid compared to other sectors. The oil sector pays its employees much more, considering that the minimum wage is average around USD 700 per month. More than half of the PMFSI and PMFSU executors who responded to the survey said that it is difficult for them to get people already trained. Most of the workers prefer to work in energy and oil activities, mainly for the better salaries. PMFSI executors also said that a smaller proportion of employees prefer to work in agriculture and mining activities. All license holders agree that the lack of trained personnel in forest management, harvesting and sawing is affecting their sales, in part because of migration to other drylands and that they consider it a priority to be solved. However, they do not have the funds to provide training or hire well trained employees.

² They do not have fixed contracts with the implementers for more than one fiscal year or have guaranteed re-newal of their employment (either part-time or full time).

■ 4 DISCUSSION AND CONCLUSIONS

The economic situation of the PMFSI and PMSFU executors differs significantly. Mechanization and the ability to hire specialized employees imply that the PMFSUS executors earn higher revenues than the PMFSIS license holders. Nevertheless, they have many points in common. For example, both types of executors are discontent with the product prices. Although they have ideas on how to deal with the problem on their own, in most of the cases they would like the government to support them more. Specifically, PMFSI executors would like the government to set a minimum selling price to ensure better margins. Conversely, PMFSUS executors disagree with a minimum price, but they want access to credits and further mechanization to improve competitiveness and, consequently, prices. To adopt a measure like a minimum price, it is necessary to analyze the impact for each actor in the sector, the plausibility of the implementation, updating mechanisms, and the consequences of this measure. This is beyond the scope of this study; however, it is noted that this was a strong re-quest from PMFSI executors. Another aspect where support from the Ecuadorian government should focus is on law enforcement to prevent illegal timber activities. Illegal timber creates disincentives to conduct harvesting procedures within the legal framework and negatively impacts market prices.

In terms of employment, the data obtained showed that workers earned significantly above average monthly salaries and the minimum wage in Ecuador. However, especially in PMFSISs, most employees work temporarily and part-time, resulting in a lack of security in the employment relationship. PMFSUS executors hire mainly permanent employees. Both sectors have very little female employment. The wage difference within the group of productive workers reached 50%, depending on the task to be performed. On average, female staff earned less than men doing the same job, by up to 40%. Despite being above average, forestry employers compete with other sectors such as oil, mining, and agriculture, to retain employees. The lack of wage competitiveness and wage gaps leads to a lack of job security and labor precarity. Identifying this is essential when designing new policies for the sector.

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