

## Trends of forest investments in selected countries of Latin America

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### ABSTRACT

#### Keywords

forest investments, Latin America, plantations

#### Citation

Morales Olmos V, Hoeflich VA. 2024. Trends of forest investments in selected countries of Latin America. J.For.Bus.Res. 3(1): i-x. <https://doi.org/10.62320/jfbr.v3i1.56>

Received: 2 July 2024  
Published: 15 August 2024



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Investments in forest plantations are important for economic, environmental and social reasons. Latin America has a large area of forests with a wide range of development. This article aims to review the status of investments in commercial forest plantations in Latin America, with a focus on Brazil, Chile, Colombia, Paraguay and Uruguay. The paper includes a short review of five papers published in the Journal of Forest Business research on forest investments in Latin America. The current trends show that Brazil and Uruguay continue developing their forest sectors, despite challenges, in particular in the Brazilian case. On the other hand, Chile is facing some internal challenges, and the forest sector seems to be in a steady state. Colombia, even though it shows great potential, has not been able to develop a commercial forest sector as in the previous countries. Finally, Paraguay is starting a new path, which seems promising, though it relies on a new pulp mill investment on the border with Argentina. Future research should be done on the origin of the investments, the trends of investments for forest restoration as a complement to commercially planted forests, and the development of new forest sectors.

## INTRODUCTION

The forest sector in Latin America is diverse, with opportunities and challenges to develop. Each country shows a different degree of forest development, as well as different sizes of its economies and plantation areas (Hyde et al. 2022). Forests are important for the environment and to mitigate the effects of climate change. This paper focuses on commercial plantations and the ongoing issues and trends in forest investments in Latin America. One key aspect is the role of commercial forest plantations. Investments, both public and private, are crucial in shaping the future of these plantations. Over the past decade, there has been a noticeable increase in funding aimed at sustainable forestry and conservation projects. However, the success of these investments varies due to factors like governance, institutions, regulations, macroeconomics as well as biological conditions.

To understand investment dynamics in Latin America's forest sector, we need to look at how international funding, national policies, and local conditions interact. Investments can drive positive change but can also worsen problems if not managed well. This review will present case studies of successful investment-driven projects and instances where investments have been scarce, offering insights into effective strategies. By focusing on investments, this analysis aims to show how financial resources can be better used to support economic growth and environmental care in Latin America's crucial forest regions.

This article reviews the current state of forest investments in Latin America, with a particular emphasis on the primary forestry sectors in Brazil, Chile, and Uruguay. It also briefly addresses other regions with varying levels of development, such as Colombia and Paraguay. The focus is on investments in commercial plantations, rather than forest conservation, which has been extensively covered in previous literature (e.g., Sell et al. 2006).

## REVIEW OF CURRENT FOREST INVESTMENT TRENDS IN LATIN AMERICA

The literature on ongoing issues on forest investments in plantation forests devoted to commercial purposes in Latin America is scarce. Today, the focus of the discussion has shifted to investments in forest restoration. For a discussion on investments in forest conservation, a good resource is Sell et al. (2006) and Romijn et al. (2019) could be found a good summary of different initiatives<sup>1</sup>. Therefore, we combined the review of the literature with interviews and exchanges with professional in some countries in Latin America and a review of press articles published in those countries.

Investment decisions in any sector are related to both endogenous and exogenous factors. It has been studied that the determinants of investments involve both productive aspects (e.g., soils, weather conditions) and institutional aspects (macroeconomics, regulations, institutions) (Chudy and Cabbage 2020).

In relation to endogenous factors, we can consider the strategic plans of the companies, the need for raw materials for their production, the search for profitability associated with a certain acceptable level of risk, among others. Exogenous factors include the macroeconomic situation in the place of origin and destination of the investment, the business climate in the destination country, production costs, availability of raw materials, availability of human resources, etc.

In the forest sector, all these factors are considered, and it has been observed that one of the main motivations for organizations to invest in other countries is the availability of natural resources has been a central element for investing in the sector, as well as high land productivity, especially in the southern hemisphere (Cabbage et al. 2022) In the case of the forestry industry, the factors are similar: access to raw materials, low transportation costs, avoidance of trade restrictions (Nagubadi and Zhang 2008). Laaksonen-Craig (2008) analyzed the factors that attract foreign direct investments in Latin America. Wood supply was the main factor identified but also the situation of governance within the countries.

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<sup>1</sup> More recent initiatives such as the European Investment Bank FIA NBS Latin America Fund I – Global Gateway released in June 2024 is a good example. Refer to: <https://www.eib.org/en/projects/pipelines/all/20240369>

According to ECLAC (2023), Foreign Direct Investment (FDI) trends in Latin America in 2022 showed that 54% of the investments were allocated to services, 30% to manufacturing and 17% to natural resources. The discussion on the trends is focused on FDI going to renewable energy projects, which would contribute to driving linkages within the economies and contributing to the development of other industries. This could be the case of the forest industry development. Uruguay is a good example with a regulation in renewable energies passed in 2010 with the goal of diversifying the energy matrix to increase the share of renewable energies. This regulation led large forest industries to start consuming cogenerated energy in their mills.

It is interesting to look into the analysis of Chinese investment trends in the forestry sectors of Latin America. Chinese investments are interested in investments in Latin American natural resources industries, and the forestry sector is not an exception. Chen and Pérez Ludeña (2014) recommended Latin American countries would work to have diverse investments in Latin America.

Although Ding et al. (2021) mention that Chinese investment trends on the continent have expanded from sectors related to natural resources towards industry, one element that emerges is the interest that China has had in forestry sectors. Then it is something to investigate in the near future.

Recently, five papers were published in the Journal of Forest Business Research regarding the current situation and trends of forest investments in selected countries in Latin America: Paraguay, Colombia, and Brazil.

**Davis et al (2024a)** analyzed the potential of Paraguay to develop a commercial forest sector. The authors summarize, when available, and gather information as they claim that the available data are scarce. They show the slow increase of forest areas in the last decades, with an increase in recent time, going from 29,287 hectares of commercial plantations in 2001 to 204,631 hectares in 2022. According to the authors, INFONA (Instituto Forestal Nacional, in English Forest National Institute) stated that Paraguay has a potential of 7.6 million hectares, which could be considered as high-to-very high suitable land for forestry, with a total of 20.1 million hectares suitable in total, but with a wide range of qualities. Illegal logging is an issue in the country, and figures are difficult

to estimate as not all the harvest is accounted for. In the past, the government's incentives mostly passed between 1975-2004 failed. Currently there are two plans in action, but the results seem to be also scarce. On the other hand, a new investment has arrived in the country, increasing the plantation area to supply a pulp mill with a capacity of 1.8 million tons per year. The country deals with logistics challenges, as it is difficult to move wood inside the country, and land rights challenges.

**Martínez-Cortés and Kant (2024)** presented an overview of wood- manufactured products in Colombia for the period 1970-2021. Overall, the study illustrates the complex interplay between policy, market dynamics, and international trade in shaping the wood- manufactured products market in Colombia, providing valuable insights into the historical and contemporary factors influencing this sector. Interestingly enough, the sector was self-sufficient for the local market and exports and increasingly relied on imports, a shift that is marked by the authors as starting between 1983 and 1992. The market went from mostly sawnwood production to a more diversified production, including sawnwood, veneer, wood-based panels, and packaging products. The paper aims to understand the factors that drive the evolution of the Colombian wood market by considering local economic factors and global trends. One of the most important contributions of this paper is the thorough analysis of National Accounts data for Colombia, the review of industry information combined with interviews conducted by one of the authors. The historical review of Colombia's industry development is of interest to understand the importance of the industry. It might contribute to interpreting the reasons for not continuing to develop its markets, both local and international. In the case of Colombia, with a large local market, the international insertion might not be as necessary as in Uruguay for example.

**Davis et al. (2024b)** paper fits well with the previous paper, identifying the barriers to increasing forest-planted areas in Colombia. They include a wide range of factors going from scarce industrial capacity and constraints in wood supply -related, among other factors, to landscape and logistics challenges leading to uncertainties in the wood supply- to high land prices in most of the regions, also considering security issues and not well-defined property rights. The authors focus the analysis of the Colombian forest sector potential in three regions: the Andean, the Orinoco, and the Caribbean regions. They claim that the country has the potential to overcome these limitations

and to develop a forest sector to supply the local markets as well as international markets and to contribute to climate change mitigation.

Also, for Colombia, **Martínez and Orrego (2024)** analyze the potential of teak to develop plantations in the Caribbean region of Colombia, one of the regions selected by Davis et al. (2024b), by estimating growth rates. According to the authors, this species has several characteristics that make it a high-value product in global markets. In addition to this, they identified opportunities for Colombia as the sites of the study show similar site indexes to other Latin American countries and better than Asian countries. Finally, Colombia could be an exporter to fulfill conservation policies recently developed worldwide.

**Silva et al. (2024)** analyzed the dynamics of forest plantations in Brazil in the last decade, considering diverse factors that determine investments, such as, on the one hand, soil conditions, growth rates, and, on the other hand, macroeconomic and institutional conditions. The development of the commercial forest sector in this country has been successful, with plantations of both pine and eucalyptus and the development of a worldwide competitive industry in the pulp and paper sector. This industry has attracted local and international investments. The fact of increasing investments in the country is related not only to excellent growth rates but also to access to markets, both local and international. These factors have overcome a sometimes unstable macroeconomic in the last years and restrictions on land purchases by foreigners. There are specific regions with pulp mills located in Mato Grosso do Sul (MS) and Maranhão (MA) and sawmills located mostly in Paraná and Santa Catarina. Even though the Brazilian forest sector is the largest in Latin America and the largest sector in expansion in the world, the authors identified barriers to its expansion. They are grouped into infrastructure, high land prices, constraints to foreign investors, and environmental pressures from stakeholders for land uses.

## KEY MESSAGES AND PROSPECTS FOR FUTURE RESEARCH

Commercial forestry sectors in Latin America are based on the growth of the area of forest plantations, on the one hand, trying to take pressure off the use of native forest resources, and on the other hand, trying to develop forestry sectors that generate economic and social benefits to local economies. The development of these sectors in Latin America has been uneven. The leaders continue to be Brazil, Chile and Uruguay, perhaps Argentina with a different forestry sector, and then unequal situations in countries such as Colombia, Ecuador, and Paraguay with potential regarding growth conditions but challenges in other aspects. The challenges include institutional and macroeconomic aspects, as well as logistics and infrastructure. In addition, access to markets is key, both local and international, and this requires comprehensive development.

In the case of Brazil, investments continue to grow<sup>2</sup>. They are made mainly by cellulose and paper-producing companies and directed to the Brazilian centre-west. Then, this trend would consolidate its global role as the world's leading producer and exporter of bleached hardwood kraft pulp. In the case of Chile, the sector has a different reality, investments have remained stable, and the sector presents challenges that make it difficult to envision growth in the short to medium term. In the case of Uruguay, after the investment in the country's third pulp mill, which had a strong impact on the Gross Domestic Product, there has been an increase in investments in the solid wood sector in several sectors: veneer, plywood, cross-laminated timber, and sawmills. The forest sector in Brazil, regarding planted commercial forests, is consolidated and attractive for forest investments. This is due to the growing confidence in the growth of the production chain linked to agribusiness in the country and the search for financial investments that meet governance, social and environmental responsibility criteria. In this context, special attention is given to the pulp and paper sector, which requires high capital investment to maintain its competitiveness.

The pulp sector has the potential to develop other products beyond pulp, e.g. textiles, biofuels while investments in the solid wood sector can be developed towards the engineered wood sector,

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<sup>2</sup> The prospectives on the Brazilian forest sector were exchanged in personal communication with: Ailson Augusto Loper, Executive Director of Associação Paranaense de Empresas de Base Florestal (APFRE) and Professor at Universidade Federal do Paraná; and Mario Wanzuita, Director of Holtz | Engenharia em Negócios

increasing the supply of products for construction, with a positive environmental impact on the economies.

The cases of Colombia and Paraguay are unequal. In the case of Colombia, there is a good potential for its development, which is clearly shown in the articles by Davis et al (2024a,b). However, the country has not been able yet to develop a commercial sector inserted in international markets or to supply the local market. Colombia's local market is very important given the size of the population and the purchasing power of some sectors. In the case of Paraguay, a large-scale project is currently underway for the construction of a pulp mill with Brazilian capital. This project is located on the border with Argentina and has great development potential for the sector. This project is expected to be accompanied by an increase in the plantation area and, perhaps, an increase in roundwood imports from Argentina.

For future research, it is important to deepen the understanding of the factors affecting the development of investments in emerging forest sectors in Latin America. Investments for forest cover restoration are currently being developed in several Latin American countries, which do not necessarily have a focus on the development of commercial sectors. It is necessary to monitor these trends and understand how they complement or do not complement the development of commercial forestry sectors. The complementary development of these investments is of interest to consolidate economically, socially and environmentally sustainable forestry sectors. The trends show an increase in world roundwood consumption, and this generates pressure on the use of the forest's natural resources.

## **CONFLICTS OF INTEREST**

The authors confirm there are no conflicts of interest.

## **ACKNOWLEDGMENTS**

The authors would like to thank those who were interviewed for this article: Rafal de la Torre (Colombia), Rafael Rubilar (Chile), Patricio Mac Donagh (Argentina) and the collaboration of Ailson Loper and Mario Wanzuita for their perspectives on the forestry sector Brazilian.



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