

# Feasibility Study of Prefabricated Wooden Houses in Uruguay

Degree programme : Master of Science in Wood Technology | Specialisation : Management of Processes and Innovation  
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This thesis addresses the challenge of enhancing Uruguay's wood industry while addressing the housing deficit. It explores global housing technologies, local practices, wood species availability, and regulations. A market analysis identifies the potential for 150 social housing units annually. The study includes basic production plant design, cost estimation, and financial analysis using NPV and IRR for feasibility assessment.

## Motivation and Objective

This master thesis emerges from the motivation to the challenge of adding value to the Uruguayan wood industry while sustainably addressing the country's housing deficit. The study's main objective is to assess the technical and economic feasibility of producing wooden houses in Uruguay.

## Methodology

The study explores global housing technologies and then assesses the current practices adopted within Uruguay. The availability of different wood species planted for forestation in Uruguay is analysed. Two main wood species are highlighted: Eucalyptus and Pine. Following this, the research investigates the existing regulations and policies associated with wooden housing in Uruguay, including access to financing. Then, the market analysis identifies potential opportunities for social housing. From this groundwork, the strategy is developed to satisfy the

market need. This includes a housing solution considering aspects of the housing market's size, competitive landscape, and target audience. The market research has identified a viable market for 150 social housing per year. A wooden house production plant is designed considering current social housing layouts and adapting them into wooden houses. Furthermore, the cost estimation of the wooden house elements is carried out. Also, all variable costs are detailed, such as the workforce needed for the production and indirect personnel. Financial tools such as Net Present Value (NPV) and Internal Rate of Return (IRR) are used to assess the project's feasibility.

## Conclusions

The study highlights the potential of manufacturing prefabricated wooden houses in Uruguay, particularly for social housing. This development would not only enhance the value of Uruguayan timber but also address the issue of the housing deficit sustainably.



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Social Housing Project Using Timber Structure in Uruguay' countryside.