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Factors affecting the transition to the long-rotation plantations of smallholders. A case study in Quang Tri province, Central Vietnam

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Abstract

In Vietnam, plantation forests serve as an important source to sustain the material supply for the wood-based sector, especially after the restriction of timber harvests from natural forests in 2014. Approximately half of the plantation forest area is currently under the management of smallholder households. Of the cultivated species, the *Acacia* hybrid (*Acacia auriculiformis* × *Acacia mangium*) is one of the most important due to its suitability for local conditions, early benefits and low upfront investment. The *Acacia* hybrid plantations contribute to smallholders' diversification strategy which enables them to reduce farm risk, increase income, and enhance food security. Long-rotation plantations, additionally, are anticipated as a potential manner to mitigate climate change impacts. Despite that, the management practice of small-scale timber producers is usually at a low level with the prevalence of premature harvest. A comprehensive analysis of this sector, so far, is lacking.

This paper elucidates the key factors affecting the transition from the common premature harvest to the long-rotation plantation of small-scale timber producers in Quang Tri province where the species has been cultivated for approximately 30 years. 315 household heads were interviewed, following a stratified random sampling approach. Binary logistic regression and Bayesian network models were used for data analysis. The findings were validated in group discussions and expert interviews.

The results demonstrated the key determinants of smallholder households for long-rotation plantation adoption including (i) the availability of capital for investment; (ii) participation in FSC projects; (iii) assurance of seedling sources; (iv) understanding on large-sized timber market; and (v) community support. Recommendations promoting small-scale timber producers toward a more sustainable timber management practice, including long-rotation plantation as well as the role of the government, supporting organisations and industry sectors in achieving these targets were delineated.

Keywords: Adoption, central Vietnam, long-rotation plantation, smallholder households, sustainable development