How Do Timber and Non-timber Products Coexist in Uneven-aged Forests?

An Econometric Approach

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Abstract

This paper investigates the joint production of timber and trees diversity for non-industrial private forest owners using a micro-econometric household production model. Our economic model is based on the maximization of their utilities depending on the revenues of harvesting and the trees diversity with respect to technological and budget constraints. The global objective of the paper is to explain the links between some harvest strategies of forest owners, the unit prices variability and the observed diversity of trees. More precisely, we analyze (1) their demand of species diversity and their timber supplies, (2) the jointness in timber and non timber products.

We consider the forest owner in a multi-product framework where the different products are related to the species, their diameter and their quality. We use a database of some uneven-aged forests in France for which several economic and ecological variables are regularly collected. We estimate a model of simultaneous equations using three-stage least square method by taking into account the problem of endogeneity of the tree diversity.

Our results allow to better understand the effective strategic behavior of the forest owner in uneven-aged forests concerning his production of joint timber and non-timber products.

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