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Agroforests: pre-domestication of forest trees or true domestication of forest ecosystems?

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Abstract

Domestication of forest resources and artificialization of forest ecosystems in tropical forest areas are often encompassed in a linear way: from wild resources to genetically improved trees, from complex ecosystems to controlled tree plantations.

This linear evolution might be true for professional forestry or horticulture. However, it does not embrace the complexity of smallholder farmers practices for forest resources utilization. Incorporating forest resources in production systems is not a new practice in the tropics, it even constitute the very basis of a whole facet of indigenous agricultures. But this agroforestry practice is not usually considered as a full domestication process. And, in spite of an increasing amount of academic interest for indigenous forest-like plantation models, agroforestry research is not yet fully considering the prospects of these models as far as forest species are concerned.

The paper focuses on the discussion of Indonesian examples of ecosystem manipulation and plant domestication. Complex agroforestry systems have been developed by local people for the management of resources ranging from locally consumed forest fruits to highly valuable industrial products such as resins and latexes. This indigenous agroforestry is presented as an elaborate process of total transfer, not only of selected forest resources, but also of true forest structures, from the sphere of 'nature' to that of 'agriculture'. This process is analyzed as a particular domestication strategy which integrates conventional species domestication techniques to an original attempt of ecosystem domestication. Prospects for further developing this 'agroforest strategy' for the domestication of forest species are then discussed.

Keywords: forest resources, indigenous agroforestry, plant domestication, ecosystem artificialization, Indonesia

Introduction

Plant domestication refers to two inter-related aspects: one concerns the plant itself and targets the modification of morphological or production patterns of the wild species (species 'domestication' s.s.), the other aims for the design of the ecosystem in which this plant is to be included (ecosystem 'domestication'). Plant modification and ecosystem design are usually encompassed in a rather linear way: from geneti-