

15:25-15:50

Forest-based Production Systems as Tools for Establishing Sustainable Humansphere

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Rapid deforestation is normally caused by the conversion of forests into crop lands. It is easy to fall into the stereotypical idea that agricultural production always requires forests to be sacrificed. Production systems that are highly dependent on the forest ecosystem are common throughout the world, however, especially in tropical regions. In addition to timber and nontimber forest products, many products directly or indirectly depend on the forests in these systems. Shifting cultivation with fallow forests, tea cultivation under forest canopies, and forest pasture are examples of these forest-based production systems. These systems usually utilize huge amounts of forest land and the resources are distributed thinly in the forest. In contrast, the current main production system is the large-scale monocultural cultivation of commercial crops which tends to result in the complete replacement of forest into cropland. Forests are becoming increasingly more important landscapes in the context of various global issues, such as biodiversity, climate change, and water crises, and forest-based production systems are therefore worth evaluating as optional land-use techniques.

In this paper, we evaluate four forest-based production systems in the Asian tropics: 1) the selective logging system in Indonesia, 2) rotational shifting cultivation in Thailand, 3) jungle tea production in Thailand, and 3) the integrated home garden in Indonesia. All example systems have been modified as a result of changing government policy, market condition, population density, and social infrastructure, raising the aforementioned global issues. Some of these forest-based production systems appear to be very traditional and outdated. However, they have the potential to be modernized through the use of advanced technology. If these systems were utilized as land-use options, the inconsistency or antinomy between forest protection and agricultural production could be avoided and a more flexible and more sustainable land-use mosaic can be realized.