Distribution Patterns of Plant Community and Plant Utilization in a Mountainous Area of Central Vietnam -A Case Study in Hong Ha Commune-

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1. INTRODUCTION

With the agricultural lowland already fully exploited, the deforested mountainous areas of Vietnam are increasingly seen as a key resource, still remaining high biodiversity. In these areas, the indigenous people have a long tradition of natural resource utilization and as a result, secondary vegetation spreads over a large area of the landscape. Nevertheless, the forest protection policies affecting to these areas mostly ignore the ecological aspects of vegetation and the traditional plant utilization. This explorative study, therefore, analyses the distribution patterns of plant communities, the underlying environment especially of humans, and also the plant utilization of its flora, in one of the mountainous areas of Vietnam.

2. MATERIAL AND METHOD

The study area is Hong Ha commune of Central Vietnam. Surveys composed of “Land use survey”,”Vegetation survey” and”Plant Utilization survey” were performed in August and October of 2007. For the land use survey, five indigenous elders were interviewed using participatory mapping and transect walks to classify the land use in our study area. The definition of “land use” here is the land use cognized by indigenous people. In the vegetation survey, data collection was performed in 29 plots based on the land use patterns. Data for each plot for vegetation survey consist of species list, coverage and sociability of all species within each vegetation layer, as well as the information on useful plants.

3. RESULTS

29 plots sampled in five types of land use (old forest, damaged forest, firewood forest, fallow and pasture) were grouped into five types of plant community using TWINSPAN (Hill 1979) and DCA (Hill and Gauch 1980) analysis. The identified groups were Mixed *Dipterocarp* Forest, *Millettia* - *Castanopsis* Forest, *Macaranga* Scrub, *Schizachyrium* Bushland and *Axonopus* Grassland. The DCA axis1 arranged all plots into a successional order along which species richness, diversity and the degree of succession decreased. Land degradation was most apparent in land use, a matrix of human disturbance. As for the utilized plants, some more than half of total apparent species in each plant community were utilized by the indigenous people. Also, various kinds of utilization including food, medicine, fodder, firewood, construction and others were found in every community.

4. CONCLUSION

A transition from an old *Dipterocarp* forest to degraded *Axonopus* grassland is characterized by 191 plant species, discrete dominants and an overwhelming effect of human-induced disturbance. Conspicuously, the plant communities would get close to mature succession levels at the areas with difficult accessibility and less human disturbances such as plant resource exploitation practices. Summarizing the vegetation, human disturbances and land use information on our physiotope, we hypothesized a conceptual model of vegetation change of secondary vegetation in Hong Ha as an aid to understanding the observed of plant community differentiation.