



Thesis Abstract

Forest Land-Use Change in Ngoc Phai Commune, Cho Don District, Bac Kan Province, Vietnam (1990-2005)

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This study aimed to determine forest land-use change (FLUC) for the last 15 years (1990-2005) during *Doi Moi* (Renovation) era in Ngoc Phai Commune, Vietnam. Village surveys were conducted to gather biophysical and socioeconomic characteristics of the study site. Key informants' interviews using semi-structured questionnaires were undertaken to determine the driving forces of FLUC.

For the period 1990-1998, the total area of forest degradation was 199.31 ha, measured by the transformation from dense to open forest. Forest restoration, on the other hand, covered 108.30 ha, of which 100.01 ha of shrubs converted to open forest and 8.29 ha of open forest to dense forest.

For the period 1998-2005, forest degradation totaled 560.64 ha broken down as follows: dense forest to shrubs, 290.25 ha; dense forest to paddy field, 7.16 ha; and dense forest to grassland, 16.68 ha. Forest restoration for the same time period covered 657.91 ha (93.99 ha annually). A total area of 169.24 ha was converted from open to dense forest and 415.86 ha of shrubs to open forest and 72.71 ha to dense forest.

In unallocated areas, high rates of forest disturbance still existed due to distance from the residential areas and difficulty in controlling wood extraction and slash-and-burn activities and cattle ranching. Agricultural expansion is a result of change in purpose of land use and cropping system in the commune. Besides, soil erosion is one of the reasons for change in land user's decision on cropping patterns. Moreover, population growth is considered as one of the contributing factors to FLUC in Ngoc Phai due to increase in food demand.

However, the forest restoration in the research site marked a great achievement. National policies, market conditions and active participation of the local people in forest enrichment and forest protection contracts played an important role in the rapid changes in forest restoration. The local people were granted better land-use rights and ensure forest resource protection. The most positive impact of the program is the reduction of the slash-and-burn activities. Forest plantations and sustainable agroforestry systems were applied and eventually resulted to increased income for the local people thereby reducing the impact to forest resources.