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**Human-ecological Investigation on the Land Use of Flowery Hmong
to Overcome Poverty**

A case Study from Lao Cai Province, Vietnam

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Introduction

In the context of economic renovation, Vietnam has transferred land-use rights from state and cooperative units under central planning to individual, community and other entities. Despite remarkable success in the lowland agriculture, the advancement in the uplands stays behind expectation. Agriculture land and forest, two basic components of the human ecosystem of the ethnic minority communities, continue to be depleted. Conflicts between local people and state agencies over control and use of land and forest remain unsolved, and have been intensified or even entailed.

This ongoing study focuses on one ethnic group, the Hmong, in the uplands in the North of Vietnam. Residing in the uplands for centuries, Hmong people have developed suitable techniques of land management. Due to their strict customary rules, forest and agriculture land have been protected and used in a rational manner. In fact, they can be the best protectors for the forests and their environment - an environment being changed by forces outside their control such as state claim of land and forests and development programs. However, customary land use of the Hmong still is poorly understood. This understanding is essential to outsiders concerned with state programs for sustainable management of natural resources and poverty reduction.

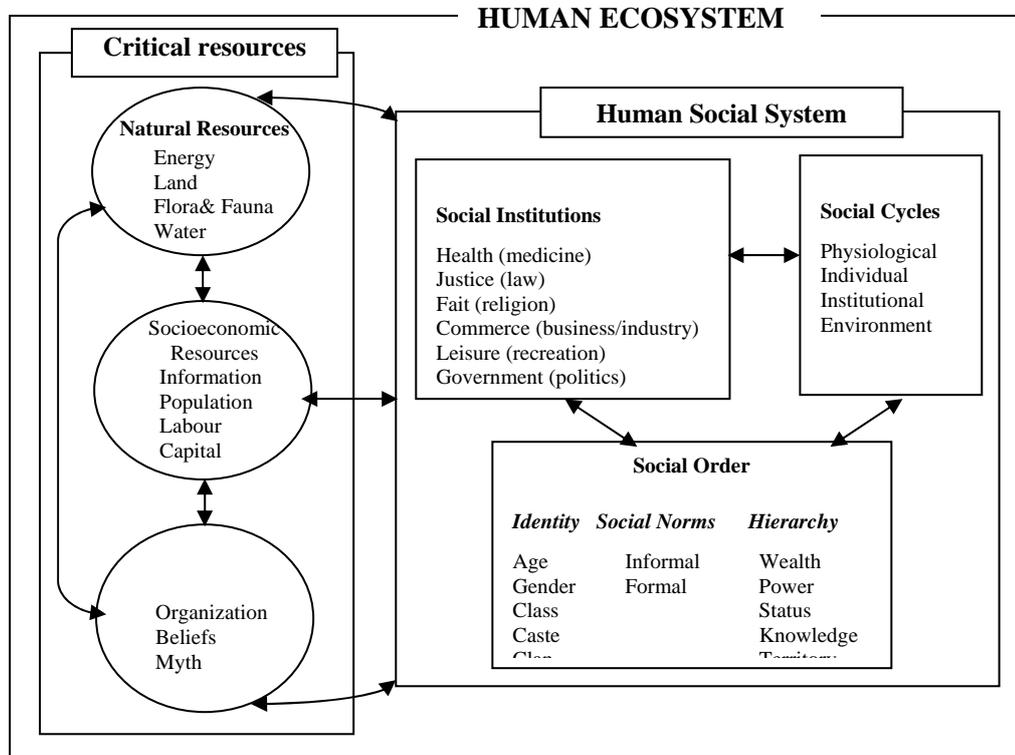
The main objective of the study is to diagnose the current land-use system by the Flowery Hmong and seek to find out arguments for harmonising customary land-use management with relevant legal regulations. Specifically, land-use by Hmong people is analysed. Then the influencing factors that shape the land use will be examined. Finally, the congruencies and discrepancies between legal regulations and customary land use will be identified, and recommendation regarding the land use is presented.

Theoretical setting

Human ecology has root from a variety of traditional academic disciplines, including ecology, anthropology, sociology, geography and psychology (Hawley 1986; Steiner, Nauser 1993; Young 1983). It is not a discipline but a perspective, a way of looking at human's relation with environment (Rambo, Sajise 1984). It offers the means to integrate natural and social sciences. In general, human ecology seeks to explain human actions that have environmental consequences and understand what those consequences are (Walter 1997). This requires attention to relevant social, cultural, economic, political and

ecological factors and the interaction between them. Furthermore, human ecological analysis can incorporate different factors acting on different scales (local, regional, etc.) (ibid.).

Human ecosystem is defined as a coherence system of biophysical and social factors capable of adaptation and sustainability over time. It can be described as several spatial scales, and these scales are hierarchically linked. Figure 1 outlines the essential elements in a basic model of human ecosystem as developed by Machlis *et al.* (1997).



Source: Machlis *et al.* 1997, p 352.

Figure 1: Human ecosystem model

Human ecosystem is composed of a set of critical resources (natural, socio-economic, and cultural) and the social system. The flow and the use of these resources are regulated by the social system. The social system is comprised of social institutions, social cycles, and social orders. Adaptation is continuous in human ecosystem, it is a perpetually dynamic system.

Study site

During the testing phase, the fieldwork was conducted in a village of Flowery Hmong, named as Lung San, in Lao Cai province, located in the North-West of Vietnam. There were 53 households with the population of 302 people residing in the village. The population growth rate was 2,1% in 2005. Most villagers were subsistence farmers. 80 % of the population aged over 15 years old were illiterate, particularly women. Among the total, there were a number of households suffering from food shortage. Statistic record of the district in 2004 showed that 85% of the households in the village were below the poverty line. A number of households in the village had access to electricity. Access to village by rough road was given.

Methods of data collection

Rapid Rural Appraisal (RRA) was used to capture primary qualitative and some quantitative data at the village level. The tool mix consisting of mapping, transect, seasonal calendar, trend matrix, ranking, Venn diagram and individual interview with key persons was used. The collected data included current land-use situation, recurring patterns of resource use, involvement of man and women in resource use, change in resources, the actors related to land use, tenure, rules, conflict on land use, communication between villagers and state organisations, local knowledge on relevant legal regulations and project 661. In addition, secondary data was collected through documentation and archival record in communal office and forest organisations at district and province level. This data included legal documents, project document, report on land-use planning, maps, census data, etc.

Results and discussion

Land-use system in the village

Land in the village is divided into six main land-use classes including agriculture, forest, home garden, resident, infrastructure and others (Fig. 2).

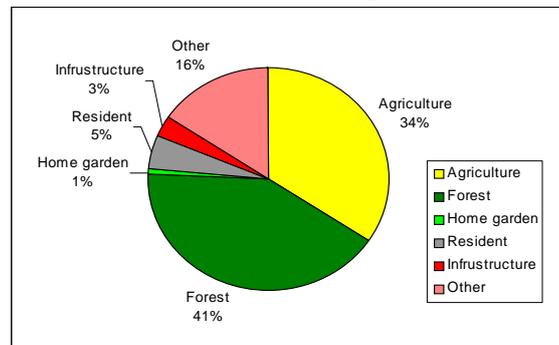


Figure 2: Land-use classes in the village

Forest land made up the highest proportion of the total land area of the village (41%), followed by agriculture land (34%), rock or uncultivated land (16%), resident land (5%), infrastructure land (3%) and home garden (1%). Land-use in the village comprises a number of activities including fixed farming, cattle raising, gardening, tree cutting, gathering of fuelwood, and gathering of non-wood forest products. These activities are arranged according to the land-use class catena like from the lower part to the upper part of the village located on the mountain slopes (Fig. 3).

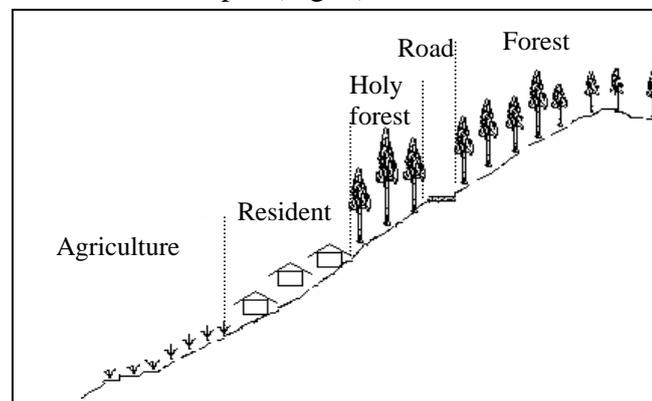


Figure 3: Arrangement of land-use classes in the village

Products harvested such as rice, maize, bean, livestock, wood and fuelwood etc. are mainly used for the sustenance of the villagers. Some are sold in the market to have money to buy other basic needs. Result of ranking exercise shows that among the land-use activities undertaken, fixed farming is the most important for the villagers for its providing the staple food for them. It is followed by livestock raising, fuelwood gathering, tree cutting for construction and gathering of non-wood forest products for consumption or sale.

Influencing factors on land use in the village

Endogenous

Fixed farming is a mostly subsistence activity carried out by both men and women. Crops cultivated depend on the site conditions (e.g. soil type, slope, stoniness, depth of soil layer etc.) and on the season of the year (Fig. 4).

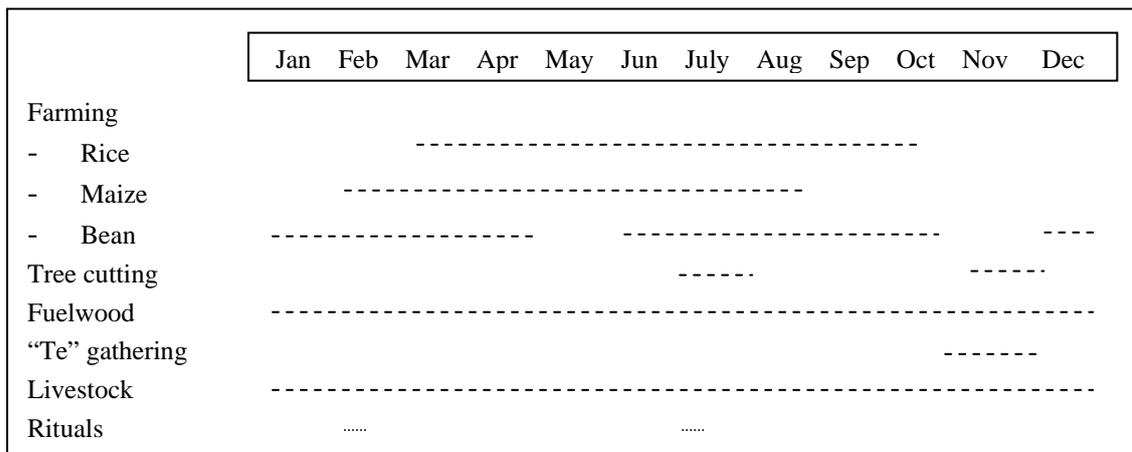


Figure 4: Distribution of land-use activities through year

The farmed lands are "owned" by individual households on customary claim. The households have rights to plant crops and to harvest products as well as to sell or inherit the land without asking for permission of someone else. Customarily, no one is allowed to do farming on the land of the others without their permission. Villagers who let their buffalos damage the crops of others will be fined. There are two men, called "Song Tho", traditionally selected by the villagers in god Thau Ty offering ceremony responsible of monitoring these rules and solving the dispute among the villagers on land use. Sometime, the elders are also involved in solving the dispute. At present, the village head, who was elected by villagers and approved by communal people's committee, and the communal cadastral official are also involved.

Tree cutting is an activity taken by men (Photo 1). Villagers have knowledge on tree species, their products, and quality and uses of the products. During the transect walk, names of 18 tree species were mentioned by the villagers. Among these species, 16 could provide wood with different quality for construction, 2 could provide fruit for food. The natural forests, where trees are cut, are mainly claimed by individual households. They have the forests through inheriting from their parents or buying from other households. Customarily, the claimants have rights to use the forest, decide to cut or sell tree, exclude others from using their forest and inherit forest to their descendants or sell to others. No villager can cut tree without the permit of the "owner". Villagers who break the rules will be fined by the forest "owner". The fines can be in cash or in kind such as food, labour, and wine. However, these customary rights of the villagers or households are not recognised by

state authority. So far, there has been no forest allocated to the households by the state authority. Sometimes, the forest "owner" does not cut trees but sells them directly to other villagers or outsiders. In this case, in addition to ask the "owner" for the permit the outsider have to ask the village head and communal official in order to bring the tree out of the commune.



Photo 1: Tree cutting by men



Photo 2: Fuelwood gathering by woman

Fuelwood gathering is mainly carried out by women and children (Photo 2). They generally go in groups of two or three to nearby forest in the village to gather fuelwood. Sometimes, men are also involved in. It has been accepted for long time that villagers have rights to gather fuelwood in all forests in the village, regardless forests are "owned" or not. There is no rule on fuelwood gathering in the village. However, villagers when gathering fuelwood often use only dead trees, dry branches, and try to avoid damaging of alive trees.

Beliefs in gods and taboos are other factors that influence land use by the villagers. There are areas of holy forest and holy trees where gods offering ceremonies organised by the villagers every year. Villagers believe that there are gods dwelling in these areas, dragon in holy forest and "Thau Ty" in holy tree, helping villagers with the living. There is taboo to cut tree in the holy forest or holy tree because villagers believe that if they do they will be ill. During three days after offering ceremony, there is taboo to cut tree or work. Villagers who break this taboo will be fined by village to provide foods (wine and meat) to organise the ceremony again.

Exogenous

Land use in the village is also influenced by exogenous factors like legal regulations, state reforestation project, and state institutions. Slash and burn farming which was carried out by villagers before is now no longer happening. Villagers know that burning forest for crop land is forbidden by state authority and forestry institutions such as Communal People's Committee (CPC) and Forest Protection Station (FPS). Villagers who cause forest fire will be punished seriously by CPC and FPS.

According to state authority, all natural forests in the village are classified as protection forest with the main purpose of watershed protection. These forests were allocated by Provincial People Committee of Lao Cai (PPC) to Management Board of Project 661 (MBP) for protection and management. The main task of MBP is to implement reforestation project 661 with the aims to protect and develop protection forest and contribute to poverty reduction in Si Ma Cai district. The project was designed by MBP and related state institution and approved by PPC without local consultation. In 2002 and

2003, the project had invested in protection of all natural forests including forest customary claimed by individual households in the village. Tree cutting is strictly prohibited by the project. Villagers who cut tree will be fined by the MBP and FPS according to the relevant state regulations.

In practice, villagers still engage in tree cutting following their custom, therefore, conflict occurs between MBP and the villagers on forest use. It was reported by the head of FPS, there was the case when a villager cut tree in the claimed forest, the MBP and FPS came to fine him and confiscate his timber. However, local people resisted and MBP and FPS could not do the fine. The head of FPS also suggested that MBP should clearly identify which forests belong to households and which belong to MBP in order to avoid the conflict.

However, land-use planning is not the responsibility of MBP. It is the responsibility of the Environment and Natural Resource Section of Si Ma Cai district. Villagers did not involve in land-use planning done in 2005. The process of land-use planning was as follows: meeting between inventory officers and the CPC; collection data/measurement in field; data analysis outside the commune; dissemination of the results at the meeting with the communal official and the village heads in the commune. As the result, villagers do not know about the land-use planning as well as where the protection forest is and who the legal owner of this forest is.

Conclusion

In the studied village, land-use system is comprised of a number of activities that complement each other in space and time and are mainly for the sustenance of the villagers. These activities are influenced by interacting biophysical and social factors at different scales. Conflict between state institutions and the villagers on land and forest use continue to exist when land use and project planning still are rested with state institutions without profound participation of local community. It is recommended that participatory land-use and project planning which involves state institutions, local people and mediators through out the planning process to harmonise land-use options at local level would facilitate local people based land and resource management.

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