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RESEARCH ARTICLE

**COMMUNITY- BASED FOREST MANAGEMENT AND LIVELIHOOD STRATEGIES OF LOCAL PEOPLE
IN HIGHLAND VILLAGES OF VIET NAM: A CASE STUDY IN NGHE AN PROVINCE**

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ABSTRACT

The aim of this study was to have a clearer and better understanding of the existing contexts of forest management, especially traditional management practices of the “Thai” in the highlands. We have also explored the potential in sustainable community- based forest management, attempting to understand how the “Thai” reproduced and transformed their traditional management to persists through this period of transformation and to provide the necessary information based on a case study to improve the legal framework for developing community- based forest management. This study was conducted in Khe Ran Village, Bong Khe Commune, Con Cuong District, Nghe An Province, Viet Nam. The set of activities involved in community based forest management were, Perception on Property Relations and Participation of Villagers in Community Forest Management and The “Thai’s” livelihood as coping strategies. Documentary research; semi-structured interview; key informant and focus group discussion; participant and non-participant observation; discourse analysis; participatory rural appraisal and data analysis methods was used to collect the information.

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INTRODUCTION

Community-Based Natural Resource Management (CBNRM) can be used as way of looking at the traditional systems instituted by the local people for natural resource management in Vietnam’s mountain areas. Community – Based Forest Management (CBFM) systems have a long history of development in the various ethnic communities in Viet Nam whose livelihood is closely linked with the forest. The CBFM is part of indigenous knowledge. The characteristics of CBFM is related the economic, social and cultural traits of each village community. Donovan’s point of view regarding the socio-economic and environmental security of forests is that giving the forest land to local communities is more effective than giving it to individuals, because many important activities, especially forest protection, require activities co-ordinated at a scale greater than the household scale (Donovan, 1997). Other academics support this stance on CBRM. According to Runge (1986), CBRM’s can play an essential role in encouraging the retention of natural resources. He says that CBFMs usually supplement and combines with individual management systems. In the current generation there has been much economic, political and social change in Viet Nam. As a result, a lot of change has taken place in natural resource management forms, including management of forest resources by rural ethnic communities.

The nature of this change, it’s effects, and it’s regulation is a critical issue. It is related to state policies, farmers’ livelihoods and environment protection and improvement. Especially in forest resource management, this issue needs both attention from the state and the active participation of local communities in order to generate suitable policies and solutions. Some questions which should be investigated include: Does the traditional CBFM of ethnic groups still exist today? if so, in what form does it exist and what are its impacts?

Similar to the situation in many other countries in the world the recent quantitative and qualitative degradation of forest resources in Viet Nam, has become a serious issue. There are three levels of forest resource management in Viet Nam: State, Private and Local Organization. In the past, the focus was on state forest management, but the inefficiency of this level of management has led to rapid forest degradation. Nowadays management for the protection and development of forest resources is an urgent need, not only for forest users, but also for every administrative level from central government to commune and village level. One initiative to try to achieve this which is still in the process of being implemented is the allocation of forest lands to households. It is hoped that giving forest management rights to private interests in such a way that the benefits of to the individual are linked to the judicious management of the forest. This will help protect and develop forest resources. Allocation of land to specific households is a good idea but excessive focus on household level management has lead to some socio-economic problems and the actual

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allocation of land is not yet completed. In practice, the Vietnamese State cannot manage all the forest and not all of the area under its control is covered by the individual management systems. Currently, out of 10 million ha of forested land, 6 million ha has been given to economic organization, for example forestry farms and economic production units, and 2 million ha to farmer households, and the remaining 1 million ha of forest, which the state does not have enough manpower to manage, has become an open access resource? (Lan, 2004). The dilemma is, who will be the owners of this common forest area? Is it possible to return this forestland to the communities that used to be its owners?

In order to make forest management more effective and sustainable, there has been little attention paid to CBFM, which would be a very useful technique for achieving this goal. In fact, local people have had experience of CBFMs for a long time. In many locations, traditional CBFMs still exist and are being developed, for example the CBFMs of Thai, Danlai in Nghe An (Lan (ed), 2004). It's long existence in many area shows that CBFM has its advantages. But in present times the natural and socio-economic situation has undergone structural changes. Adaptations need to be made to the traditional CBFM in the light of those changes. For example, CBFM used to exist outside of formal laws, but recently, as other natural resources have become exhausted outsiders have started to regularly trespass upon the territory of CBFMs and violate their resource management rules. So the existence of backing for CBFM in basic law is an important foundation for the continuing development and viability of CBFMs in the context of change in Viet Nam today. A study by Saneh Chamarik and Yos (1992) outlines eight preconditions which are necessary for a community to be able to look after its own forest resources. For example, there must be a strong sense of community within the kinship group. Through benefits and the underlying cultural and moral values, CBFMs are seen as an integral part of subsistence and peasant farming systems (Anan, 1992). Koos (2003) contends that when the government policy changes, the people's livelihood strategies also change.

Faced with problems have emerged from the enforcement of state land tenure policies, local people change their livelihood strategies by their own everyday practices. The CBFM system, which strongly depends on indigenous knowledge and practices, beliefs, and customary institutions to provide equitable access to natural resources, may differ from government institutions, and can serve as a sound model for forest conservation at the community level. Successful forest management cannot be achieved without participation of local community.(Xu Jianchu, Luxing, Jefferson Fox, Nacy Podger & Ai Xihui, 2000). According to Anan (1992), future development of community forest depends largely on the legal recognizarnors of community based legal bodies with rights of control of forest resource. This will enable local people to effectively protect their forest against outside encroachment. In case of land tenure of the H'mong in Viet Nam, Hoan (1995) show that for all practical purposes, though, land ownership remained in the hands of rural communities. Researching and assessing work of CBFM and problems related to livelihood not new to Viet Nam in general and Nghe An province in particular, however, systematical research on CBFM connecting closely the real situation of livelihood was very

few. Thus, researching work of community – based forest management and livelihood of local people in the highland of Nghe An has significance and an important role. The existence of these and other shows that CBFM has certain good points. It may be advantageous to create a way for CBFMs to co-exist with state forest management and individual forest management systems? This paper answers the following research questions: (1) How have the local people managed common forest resources in their community? (2) How does forest tenure policy affect the traditional access to forest resources of the local community? (3) How do local people change and diversify their livelihoods to cope, to adapt, and to recover when changing in resource uses and land tenure policy? And (4) What livelihood strategies are being practiced with the present tenurial arrangement compared with the past emphasizing each historical stage? Therefore, this study aimed (i) to determine the system of community forest resource management in the local community; (ii) to analyze livelihood strategies and social relations adapted by the local people in community forest management activities and current development processes.

MATERIALS AND METHODS

Primary data was obtained from a few month fieldworks through different data-gathering methods, both qualitative and quantitative data encompass information on the implementation of state land tenure policies, socio-economic households, local livelihood activities, forest management practices, local land tenurial arrangement, land use types and resources utilization and local everyday practices. Data are collected with (1) Household survey; (2) Key informant interview and group discussion; (3) Participant and non-participant observation; and (4) Mapping and transect mapping. The statistical software use for analyzing data: SPSS 18.0.

The research site

Khe Ran is an old Thai village. It was set up about a hundred years ago. Khe Ran village is a Thai community in Bong Khe commune, Con Cuong district, Nghe An province. It is approximately 3 km from Con Cuong town, at an elevation of 600m above the sea level, close to both Ca River and Watershed forest. At present, the total natural land area in Khe Ran village is about 960 ha. Agricultural land takes up 78.4 ha, and the remaining 810 ha is forestry land with 80 ha community forest. Khe Ran has 210 ha Met bamboo forest and 340 ha plantation from total of 810 ha forest. Forest around Khe Ran mostly is bamboo forest and palm. The evergreen forest occupies 13% and the left is mixing of wood and bamboo (Table 1). The total population of Khe Ran village was 768 persons, only Thai, living in 140 households. The average number of people per household is 5.7. The percentage of females was 50 percent. Total number of labors was 269, occupying 40% of total population, of which 140 are women, that is 52.32 % of total labor force. These households are divided into 4 clans: Lo, Vi, Ha and Luong clan. The production in this area are mainly self-subsistence and extensive. The main incomes depend on the agriculture and Met bamboo also plays an important role in their life. In the last ten years, they have no longer practiced shifting

cultivation and planted dry rice anymore because forest is demarcated boundaries and they cannot cut forest.

Table1. Land use Pattern in Khe Ran Village

Criteria	Area (ha)	Percentage (%)
Total area	960.0	100
1. Agricultural land	66.4	6.9
Paddy field	26.0	2.7
Cassava	10.1	1.1
Maize; Peanut; Soil bean	28.1	2.9
Others	2.2	0.2
2. Forestry land	810	84.4
Forest land managed by village council	325.6	34.0
Forest land allocated to households	486.4	50/7
Including:		
Met bamboo forest	210	21.9
Planted forest	340	35.4
Cinnamon forest	24.2	2.5
Palm forest	12	0.1
Wood forest	118.3	12.3
3. Special use	17.5	1.8
Residential land	10.2	1.1
Road	3.0	0.3
Stream	4.3	0.4
4. Others	74.1	7.7

Source: Surveyed data, 2012.

Table 2. Livestock Holding by Household Groups (head)

Kinds of livestock	Household group		
	Better - off	Medium	Poor
	Average No. of Heads		
Buffalo	4.2	2.8	1.2
Cow	1.9	1.3	0.8
Pig	4.0	3.0	1.7
Cattle	9.4	6.7	8.7

Source: Surveyed data, 2012

off-farm activities. Cropping patterns are very diverse and distributed through different altitudes. Cropping patterns are made up of complimentary pairs of crops, one grown in the hot and one in the dry season. Maize is also planted together with pumpkins and peas of different varieties. Maize has a high productivity of 238 tons/years and is a good source of cash income for the villagers. Besides wet rice cultivation, animal husbandry plays also a no less important role in earning income of residents in the village. They make a good living from animal husbandry. They keep draft animals such as to do heavy pulling in paddy fields, and all of the animas they keep provide food to households in their daily lives.

For livestock holding, in almost all economic groups most households at least a few buffalos, cows, pigs and chickens. Data provided by the village headman shows that everyone has pigs and chickens, because they don't require any special food. They can be raised by using left-over goods (Table 2). From table 2 it is obvious that only a few families have large numbers of pigs. Only better – off income household who practice wine making and have enough capital to invest in it engage in large scale pig raising. Most cows belong to high-income households because a cattle raising requires high investment capital and a long production cycle. Therefore local people often use the number of head of cattle held as an indicator of household status. Non- Timber Forest Products (NTFP) play a very important role in the daily life of the Thai also (Table 3). There are a wide array of such products such as firewood, Met, Bamboo, medicinal plants, and others. Presently, all households in the village engage in non-timber product extraction. Harvested products are used both for household consumption and for commercial purpose. The cash gained from non-timber products account for about 40 percent of household incomes. Presently the economy of the Thai is based on natural resources. Their livelihoods are derived from natural resource stocks that are paddy lands, forestlands, and forest resources. Yet they are increasingly strongly influenced

Table 3. Importance of Non-timber Forest Products

Production	Collection time	Importance	Purpose	Proximity	Availability
Firewood	Entire year	10	Use/sale	1	6
Met/nua	Entire year	10	Sale	6	5
Bamboo shoot	May-July	10	Sale/use	3	8
Palm leave	Entire year	7	sale/use	1	5
Animal vegetable	Entire year	10	Use for animal	6	7
Household used vegetable	Apr-Aug	4	Use	4	3
Medicinal plant	Entire year	5	Use	1	6

Source: PRA in Khe Ran village, 2012.

Notes: Important10: the most important (either for households use/sale)

1: the least important

Proximity10: The farthest proximity from home.

1: the shortest.

Availability10: the most available

1: the least available.

Most local people live at a subsistence level. There is no big economic and social status gap among households and communities. Some households which live quite comfortably and have permanent houses or larger numbers of domestic animals than others but they all live their lives more or less depending on the same activities. The villagers categories themselves into 3 groups based on their economic and self-reliance conditions. 20 percent are considered the better off families, 55 percent for the average families, and 25 percent for the poor families. Major economic activities in the village are cropping, animal husbandry, forestry production, and some

by outside forces markets. Has there been any change in term of the Thai livelihoods brought about by government intervention? How do local people change and diversify their livelihoods to cope, to adapt, and to recover when changing in resource uses and land tenure policy? The following parts will answer the above questions.

RESULTS AND DISCUSSION

Perception on Property Relations in Community Forest Management: First, in term of benefit sharing, every villager

if authorized by the headman of the village can access community forest. Mr. Tiep who is headman of village said villagers can collect the forest products through verbal or written permission of the headman or his assistant. However, several people did not take any permission for the collection of forest products. Permission to collect the forest product will depend on the urgency of the villager's situation. Villagers earn income through the sale of different products such as mushrooms, medicinal and edible plants, rattan, bamboo, honey, and fruits harvested from trees...etc. These products are sometimes sold in raw form and others in finished or semi-finished products. Direct benefits from the community forest can be broadly divided into major forest products and minor forest products. These are described in the following sections. Major forest products such as timber, wood for fuel, Nua bamboo, and wildlife collection are two major forest products that can be derived from the community forest. Wildlife is a particularly important source of income for villagers. At present, villagers have their own rules and regulations regarding the use of forest products from the community forest. According to Tiep, if somebody violates these rules and regulations, actions are taken through the legal process as according to the forest act.

Only the old dead and fallen trees are allowed to be cut by the villagers. If somebody wants to cut green trees, he/she must obtain permission from the village headmen or forester. Only in exceptional cases are the cutting of green trees permitted. Some of the households collect wood for making charcoal on a commercial basis. This depends upon the availability of manpower/labor in the family and the workload in the agricultural field. When questioned about the availability of wildlife from the community forest, villagers express concerns about wildlife decreasing due to uncontrolled hunting and defective management.NTFPs: Mushrooms, rattan, bamboo shoot, honey, and fruit of tree, vegetables, medicinal and edible plants are minor forest products derived from the community forest. Mushrooms are one of the important NTFPs. Women in the village collect them for their own consumption. The best season for collecting mushrooms is from April to August. However, mushroom production is decreasing due to the mismanagement of the community forest. Rattan and bamboo are two other minor forest products. Villagers collect these products on a large scale. They make handicrafts such as traditional baskets, fishing traps, hats, mats, construction material...etc from these products. Some of these products are sold to other nearby villages or markets, an important source of income also for the village. The price of these products varies according to the size and the quality of the products.

The availability of honey is limited in the community forest. Sungrass is used as an important fencing and roofing materials for households. Fruit of trees such as oranges and vegetables are used for food, so are very important. Traditional medicinal and edible plants are very important for health. The villagers sell minor forest products after making finished products; thus these products have become an important source of income for the villagers. Villagers are now worried about the mismanagement and uncontrolled collection of the forest products. Secondly, perception of property and resources as social relations in community forest resources management. The perception of the "Thai" people in Khe Ran village on the

social relationship of community forest resources management is based on jointness and exclusive use of the resource, particularly the forest. Perceptions of the respondents were analyzed in terms of their agreement/disagreement between various statements relating to these social relationships. The relationship of jointness pertains to the perception of respondents on the degree of utilization or extent of NTFP gathering as a common resource, responsibility and sharing of collected resources by the community. Measured in terms of responses to statements of "agreement" and "disagreement" on jointness. Table 4 indicates that about two-thirds of villagers (98 households) who were interviewed agreed that a forest resource is a common resource; hence its use should be shared among community members.

Table 4. Perception of Property Relation of a Community on Forest Resources Management

Aspects of perception	Disagree	Agree
A. Jointness		
The forest is a common resource hence, it should be shared among community members	18.7	81.3
Everyone have right to access forest resources in a community forest	32.4	67.6
Access to forest resources should be regulated	23.5	76.5
Only the members are entitled to forest resources in a community forest	31.6	68.4
Access to the forest resource should be limited only to the head of the household	42.8	57.2
B. Exclusion		
Community forests should be allocated and boundaries established	17.6	82.4
Community forests should be a forest resource allocated to all households	78.1	21.9
Outside villages should have access to the community forest	81.7	18.3
Only those households who participate in the management and conservation of community forest should have access to forest	57.4	42.6
C. Perception of villagers towards responsibility in the conservation and management of community forest		
Conserving the forest should be the responsibility of users	37.3	62.7
Forest resource should be managed properly	15.7	84.3
Fuelwood cutting should be regulated because it is a finite source of energy	22.5	77.5
Need to manage the source of forest even if it can regenerate itself	32.6	67.4

Source: Household survey, 2012.

Table 4 also indicates that the issue of exclusion refers to the perceived agreement or disagreement on the legal or traditional physical boundaries or areas, which determine access to resources utilization, e.g. NTFP by user groups, individual and/or the community. Generally, all the villagers agreed that an area of community forest should be defined and boundaries established but allocation should be limited to households. The reason behind this is probably to keep the community forest not only as an NTFP source but also for construction, natural food and animal raising because land for production is limited. However, there were mixed perceptions on access to forest resource of all households dependent on their participation in the management and conservation of the community forest. 57.4 percent of respondents did not agree with this. The general perception of the villagers, however, was that access to forest resources from the community forest should not only be limited to participating households as it was a common resource, although its use must be regulated. One important factor in CBRM is that users are responsible for the

conservation and management of the community forest. Generally, the respondents perceived that the community forest should be conserved and managed by the users themselves (see Table 4). They saw that it should be conserved and protected for their own benefit, despite its being a common resource. Most believed that cutting of wood for fuel and NTFP collection must be regulated because fuelwood and NTFP are finite resources, although they can regenerate naturally. Among the villagers groups, the youth was the only small group that felt conservation of the forest was not the responsibility of the users because they did not understand enough about the important of forest to their life. In their view, community forest should be seen as common property, so they can use anything in forest but do not believe that they have to undertake any duties to protect it. However, most members in the village agreed that they ought to manage it and that forest product collection should be regulated.

Thus, local people see property relations as part of social relations. The behavior of villagers is flexible in responding appropriately to prevailing conditions in the social and physical environment. Depending on the situation, users in a community can be in competition or cooperation in management of natural resources. This reflects the complexity and dynamism of social relations in which the community is involved. The "Thai" people in Khe Ran village see forest as a common property of the community. Every member of the village had to have responsibility in protecting forest so that they have the right to utilize forest. This perception of property and resource can have two meanings. On one hand these principles give villagers exclusive rights and duties. In the past all members in their community as well as members of other neighboring communities respected these principles. On the other hand, these social relations emphasize communal benefits rather individual ones. In this sense, the forest reflects the communal solidarity and consensus. It creates a strong sense of belonging to a community among villagers.

Participation of Khe Ran Villagers in Community Forest Management

In order to maintain community forest, there were five requirement for the participation of villagers in a community to enable them to look after their own forest resource. First, participation in forest operations consisted of harvesting wood from the community forest for construction purposes; protecting the forest from fire and cutting; and collecting fuelwood for household use. Table 5 indicated that every household harvested wood from the community forest for construction (75.8 %). More than two-thirds (84.4%) of the total number of households participated in protecting the forest from fire and illegal cutting. Overall, most of the households (97.4 %) collected fuelwood and NTFP for household use. Secondly, is the setting of rules and regulations. More than 87.4% of all the respondents had not participated in the initial stage of formulating the rules and regulations, as this had been undertaken by the Community Resource Management Council (CFRMC) of only 7-10 members. However, more than 74.8 % of all respondents reported that they had participated in the enforcement of the rules and regulations formulated by the CFRMC. On the monitoring of the activities of the members of the community forest, more than half (65.3 %) of all the

respondents reported that they had participated in this activity. Disseminating the rules and regulations to other members and other villages was also done by the "Thai" people in Khe Ran village. Thirdly, in the silviculture development planning and implementation of community forest, an arrangement was established between the project and farmers, wherein the users were initially dependent on the external decision-makers for the legislation and enforcement of operational rules. In this case, the silviculture officer and the village headman initiated an internal arrangement with the community about forest management. The arrangement in setting up the community forest started with a consultation on project planning, implementation, and selection of area and allocation of resources. More than 45.2 % of the respondents had participated in setting up the community forest for their village through consultation with silviculture officers and 58.7 % with the village headman in planning and implementation of community forest. Fourthly: reciprocity and cooperation. Reciprocity is a form of interaction manifested by participation in benefit sharing among group members or users' groups in community forest management. Table 5 show that 76.8 % of the respondents generally did not share forest resources with outsiders or with relatives. This was so because forest resources in the village community forest were still abundant and any household member could gather forest resource as permitted by the community forest management council.

Table 5. Participation of Villagers in Community Forest Management

Aspects of participation	Did not Participate	Participated
A. Forest operation		
Harvesting wood for construction	24.2	75.8
Protecting the forest from fire and cutting	15.6	84.4
Collecting fuel wood and NTFP for household use	2.6	97.4
B. Setting up rules and regulations		
Formulating the rules and regulations	87.4	12.6
Enforcement of the rules and regulations	25.2	74.8
Monitoring of the activities of the members of the community forest	34.7	65.3
C. Arrangements		
Consultation with civilculture officers in setting up the community forest	54.8	45.2
Consultation with the village headman in planning and implementation of community forests	41.3	58.7
D. Reciprocity and cooperation		
Sharing resources with outsiders	76.8	23.2
Sharing knowledge and experiences in management of the resource	45.7	54.3
Cooperation in the enforcement of rules and regulations	16.4	83.6
Cooperation in resolving conflict	25.8	74.2

Source: Household survey, 2012.

A majority (54.3%) of the respondents participated in sharing their knowledge and experience in the management of the resource. They also shared their knowledge and experience with other members of the community. Cooperation in community forest involved the interaction of the individuals, the group or a committee, toward attaining the objectives of the community forest management in term of degree of participation in the enforcement of rules and regulations, resolving conflict, and group work in community forest activities. There was a high percentage of cooperation in the enforcement of rules and regulations for the community forest

among all villagers, while there was relatively good participation (74.2%) among the villagers in resolving conflict in the use of the community forest. As to cooperation in resolving conflict, the "Thai" are observed to be very active, with strong community participation in community forest management activities.

Local Institutional Arrangement on Forest Management

First, establishment of the management operation of rules. Operational rules are devised by the local community to regulate the use of forest resources held as a communal resource in a specific community. These rules vary from one community to another depending on the physical constraints and the socio-economic characteristics of user communities. These various types of rules that can be employed, serve the user groups in the interest of maintaining the yield of the common resource. Alternative patterns of use should be evaluated on the degree to which each makes demands on resources. Operational rules are derived from collective choices that are also rule-ordered. These rules that establish conditions of collective choice to allow a group of appropriators to manage their commons can be understood as a common property arrangement. Individuals are no longer entirely free to decide for themselves how to make use of the commons, as in a private property arrangement, but participate in a process of collective choice that sets limits on individual use.

In Khe Ran village, management of the forest areas has been under the umbrella of "An Agreement on Forest Protection of Khe Ran" updated August 26th, 2003. This agreement was reached by consensus of the villagers after the meeting of the village council in the watershed forest and village forest management. They have also drawn up "village laws" to maintain peace and order within the community. This kind of law, locally known as "*Hit Khoong*" has helped settle a variety of minor conflicts at village level. The range of village laws can cover such issues as internal affairs of households, vandalism, theft, disputes and nuisance. The village disseminated the laws of Khe Ran on a large notice board, positioned at the meeting room or big tree where everyone can see it. The village law is based on the consensus of members of the community and therefore is commonly understood and accepted. The operational rules for the community forest are based on traditions that have continued for generations. These rules become common knowledge and are constituted as common laws. All households know the rules and traditional practices which apply to the community forest, despite lack of any written documentation.

The operational rules of the community forest in Khe Ran are intended to prevent the appropriation of community forests by outsiders, while the people of Khe Ran enjoy the rights to these resources. Every member of the village has to have responsibility in protecting forest so that they can then have the right to utilize the forest. This principle gives villagers exclusive rights and duties. In the past these principles were respected by all members in their community as well as members of other neighboring communities. Hillsides, trails and streams mark demarcation and division of forest boundaries from other communities. Each community has

rights and duties within their forest boundaries. However, in terms of the present property regime, the state has the rights and jurisdiction over the community forest. The villagers have a duty to comply with the government regulations. Analysis of the operational rules in the community reflect the constraints of the physical and technical attributes of community forest resources as well as the influence of socio-economic characteristics of the user community. Therefore, to make the operational rules effective, the community needs some kind of organizational arrangement to administer and enforce the rules, and involve the people in the decision-making process. Secondly, the allocation of benefits to the local community was established with permission from the village council to allow the people access to forest benefits in terms of forest products such as mushrooms, bamboo shoots, rattan, fuelwood and lumber for construction. In the process, benefit allocation and sharing according to the rules and regulations was promulgated by the community forest management council of village through the people's committee of Con Cuong district and from Bong Khe commune. The rules and regulations were formulated based on the forest classification and forest plans established by the concerned agencies and organizations at village level. The people's committee of the commune and the community forest management council, with the cooperation of users, imposed fines for violations of the rules and regulations.

Thirdly, two levels of rights recognition for forest utilization were established, namely: (a) the opportunity to enjoy the benefits and (b) the access to forest resources at the community level. This form of recognition was granted by the community forest council at the village level based on the traditional and legal rights of a village member. The location of the village also affected the use of forest resources. The network's recognition of communal rights instituted grants by the community forest council to control forest resource utilization. Government recognition of forestry rights was granted to the users for forest utilization by the project policy. Its implementation allowed the beneficiaries to use forest resources for land cultivation, construction, fuelwood, and food among other uses. In this stage, the user groups gained recognition and were allowed to use the forest and share the benefits from the forest resources in the village within the boundaries established by the forest resources management council. Fourthly, the roles of the Community Forest Management Council, the village network organization and the community forest council were established to develop and increase peoples' awareness of the forest resource problems relating to their water-sheds, and of related problems in neighboring villages and the whole forest area in general. The tasks of the community forest council in village were as follows:

- Identify forest problems and generate appropriate solutions in the operation and management of the community forest.
- Issue rules and regulations on the utilization of forest resources.
- Enforce the rules and regulations by imposing fines on violators.
- Coordinate with the project officers and government agency concerning the forest resource use.

- Collaborate with project staff in planning and implementation of forest activities.
- Inform and disseminate forest information among the forest users living in and around villages.

The “Thai’s” Livelihood as Coping Strategies

The change in land tenure as discussed above, leads to changes in livelihood strategies of the local people through activities based on the forest resources and forestland. This has increased the dependency of the local people on external institutions and forces; has created differentiation in access to resources; and intensification of resource use. Long ago, shifting cultivation was the principal agricultural economy of the “Thai”, but now, when land resource are limited, many households shifted to home gardening and cultivating wet rice, or raising animals and breeding freshwater fish. Shifting cultivation is not the main activity of those households. However, when difficulties occur, such as during floods and harvest failure, some households have returned to shifting cultivation. Livelihoods as adaptive strategies: Due to several factors, many “Thai” households nowadays have changed their livelihood similar to the Kinh’s activities. They are gradually becoming familiar with cultivating wet rice, crop planting and home gardening. These activities become an indispensable part of the livelihood of the “Thai”

The adaptation of “Thai” in arranging plant and using land

During the process of adaptation, the “Thai” already know how to arrange logically the structure of crop plants in different kinds of land with different fertility levels. Thus, in the land – use practices of the “Thai”, aside from planting rice, maize, beans and cassava to meet their food needs, they also practice inter-cropping to increase the yield in an area, and choose crop plants, which meet market needs. The “Thai” also know how to inter-crop according to the season. For example, the “Thai” plant maize, mixing peanut and cassava in the winter- spring crop and maize mixed with rice in the summer-autumn crop.

The adaptation of the “Thai” in land management

In the past, land management in Khe Ran took place on two levels: community and households. The Khe Ran village manages the land based on the administrative border. However, due to the characteristics of production, customs, habits and managed functions, Khe Ran village also manages the agricultural land, forest and residential area. The commune allocates these lands to residents for them to build houses and cultivate crops according to the number of inhabitants in each household. For the natural forest, the management is carried out in the district through the Forest Protection Office. The commune is paid to manage and protect this natural forest.

Adaptation of the “Thai” in raising animals and cultivation to ensure food security

The people in the Khe Ran village predominantly practice self-sufficient production. The survey shows that livestock initially raised before, including chickens, pigs, and buffaloes, cows. Now, there are six kinds of farm animals raised including chicken, pig, buffalo, cow, duck and fish.

Adaptation to new techniques

The local people also accepted some new wet-rice varieties such as Khai Phong, supported by the Center for Agricultural Extension. They learn both from the extension staff and the experience of Kinh living around the community.

Conclusion

- Conservation of forest from the villager’s point of view does not mean maintaining forests for the balance of ecological systems, but also utilizing forests under established rules. The traditional practices of customary institutions still play an important role in community forest management. Community forest, as a common property resource, is controlled by the local institutions to ensure equal rights in joint use among members of the community and at a rate not exceeding the capacity of sustained yield.
- Local organization is another important factor in empowering villagers to conserve and manage their own forest resources. This is different from traditional forest conservation without local organization. It was found that an important role of local organization, responsible for communal forests, is their ability to manage resources in the context of agricultural production system of community. Local organizations establish rules on how to utilize forest by putting more emphasis on communal benefits, rather than individual ones.
- The efficiency of community forest management is influenced by the degree of participation of the community members in formulation and enforcement of rules and regulations, forest protection, and need for forest management in relation to availability of NTFP near the village and from the farm lands, fuel-wood species, and consumption, level of perception on access to the resource outside the village, and consultation with village headman in CF activities. Less participation in forest protection would lead to less efficient community forest management.
- The positive perception of a community towards access to forest resources by other villages and community members, and total family farm income are positively related to the performance of community forest management. On the other hand, if the resource is not properly allocated and boundaries not established, the rules and regulations may not be applied equitably.
- The extent of user cooperation in the enforcement of rules and regulations as well as their participation in the dissemination of information contributes to the attainment of equality in the community.
- The equity of the community forest management is influenced by the contribution of cooperation in the enforcement of rules and regulations of the community forest, positive perception of access to forest resources by other villages, bio-physical attributes of the resource together with socio-economic factors such as access to the resource by other villages, total family farm income and size of landholding. On the other hand, if there is less participation of the community members in information dissemination, equity performance of the community forest management would also be affected negatively.

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