# TOWARDS UPLAND SUSTAINABLE DEVELOPMENT: LIVELIHOOD GAINS AND RESOURCE MANAGEMENT IN CENTRAL VIET NAM

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## Abstract

*The livelihoods of upland people in Vietnam depended mainly on traditional farming systems, including shifting cultivation in some areas and collecting many different non-timber forest products from natural forest. However, "in order to protect the forest better," continuous and sedentary farming practices are being encouraged by the government and shifting cultivation is in fact banned. Forests in Central Vietnam were seriously degraded during the war years and after that by extensive logging, both legally and illegally. An increasing population and the need to improve livelihoods has meant that the agricultural frontier has expanded and resettlement programs have been supported. Finding viable alternatives for farmers who used to practice shifting cultivation is a challenge for farming communities and other stakeholders alike. The CBNRM project supported by IDRC and the Ford Foundation was implemented by researchers from Hue University of Agriculture and Forestry and carried out mainly in Hong Ha commune in A Luoi district of Thua Thien Hue province. This paper presents key lessons from these experiences. We conclude that CBNRM approaches should balance long-term resource management sustainability, mainly through resource tenure issues that are often complex and difficult to resolve, with satisfying the shorter-term livelihood needs of villagers.*

## Introduction and background

Shifting cultivation is a traditional subsistence practice of upland minority peoples in Vietnam. In the municipality (commune) of Hong Ha, during the war era, these upland minorities migrated to forest areas along the Vietnam–Laos border. As they began to resettle their old lands and homes after the war, they were and continue to be faced with new challenges. These include forests seriously damaged by war (especially use of chemical defoliants), and new government policies requiring them to shift from their traditional swidden agriculture to a more sedentary farming system. According to the government, these policies are designed to protect the forest and provide better services and livelihoods. In addition, most of their traditional lands and forests were declared a "watershed protection area" and access to their forests and other natural resources is now limited. Trying to adapt to this new reality is very difficult, particularly because the arable land area per family is small.

To improve forest cover, the Vietnam government made great efforts in the early 1990s to invest in replanting and managing forests under a number of national programs such as "Program 327," the UN World Food Program reforestation effort and "The five million hectare" reforestation program. Providing institutional support to forest and land

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management, the government also issued a new Forestry Law (1991), Land Law (1993) and a number of regulatory rulings recognizing and increasing the rights of farmers to land and forest. However, conditions in the uplands and the manner in which state agencies work have made the implementation of these policies limited and fragmentary. Many of these programs were designed with little consultation with communities. Local people also complain that programs do not reach the local level and when they do, local officials are often forced to follow regulations that simply do not make sense to communities. The government tends to blame poor management systems and limited understanding of local people.

In Hong Ha, most of the land in and around the commune is now under "watershed protection and management" by the Bo River Watershed Department (a government agency). In practice, this means that local people only have access to about 1% of the total land area for agricultural or crop production. At the same time, the village population is increasing, from about 300 people in 1975 to 1200 people in 2003. Combined with the required changes in agricultural production systems and the loss of access to resources, upland people have no option but to find ways to improve their livelihoods while using and managing their natural resources sustainably.

In response to these critical needs and problems facing many communes and villagers in Thua Thien Hue province and in other parts of Central Vietnam, the Community-based Upland Natural Resources Management (CBNRM) project was developed by the University of Hue with support from the IDRC and Ford Foundation. The project is being implemented by a research team from the Hue University of Agriculture and Forestry. Hong Ha commune was selected on the basis of its social, economic and natural conditions which represent the upland situation for many communes in central Vietnam. The project wanted to gain a better understanding of the links between poverty, policies, and resource degradation and to test alternatives to improving agricultural production system and building human and social capital. Some recent changes in policy are encouraging. Local authorities have been meeting with us and with villagers to discuss different possible joint management arrangements or agreements. One of our ambitions is to "make policies work for the poor." This requires involving different stakeholders at district, provincial and even national levels.

**The Project Site**

Hong Ha and Huong Nguyen communes are located in A Luoi district of Thua Thien Hue province, in Central Vietnam (Fig. 1). There are 21 communes in the A Luoi district, a mountainous area where local people mostly belong to PaCo, Ta Oi, Ca Tu and PaHy minorities. Hong Ha and Huong Nguyen are two of the 16 poorest communes in A Luoi district and among the approximately 1,200 designated "poorest communes" in the whole country according to national poverty criteria. Hong Ha is the initial research site of the project, from 1998. Huong Nguyen is a new site where lessons learned from Huong Ha will be disseminated in cooperation with different agencies, particularly the provincial Department of Agriculture and Rural Development (DARD). Lessons from Huong Ha and Huong Nguyen will also be used to expand CBNRM approaches to other upland communities.

Hong Ha commune has about 230 households with approximately 1,200 people from different ethnic groups such as K'tu (47%), PaCo/PaHy (28%), Ta Oi (16%), Kinh (7%) or lowland Vietnamese and Bru-VanKieu. The commune's land area is 14,100 ha consisting of agricultural lands (180 ha), forestry lands (11,000 ha, though very little of that area is in

"good" forests condition), and barren hills (2,700 ha). In 2002 and 2003, about 120 ha of forestry land was converted to new rubber plantations with support from a state agency. Most of the forest lands are under management of the State Forestry Enterprise or the Watershed Protection Board of Thua-Thien Hue province. People in Hong Ha are adapting to new agricultural production systems in conformity with the local and national policies as explained above. They also keep some livestock, mainly cattle which roam freely.

Currently, Hong Ha only has a primary school with 5 classrooms accommodating 250 Grade 1-5 pupils and 2 classrooms of kindergarten. Children who want to enrol in higher grades must go to Hue city or to Aluoi, far from their homes. Almost 30% of the local people are illiterate.
Huong Ha has a new village health centre but with limited medical or other support services. Due to limited cash income people usually depend on traditional medicines and health treatments. Only when they get seriously ill do they buy medicines or visit a health centre or hospital. Common health problems include malaria, dysentery, asthma, influenza, miscarriage and pre-mature birth for women and malnutrition among children. Other important problems in Hong Ha when we started our work were a lack of food, and food insecurity. People remain extremely poor but we have seen significant changes in recent years.

With a total of 20 ha of paddy field, wetland rice is the main commodity production and income of the local people. At the start of the project, rice yield was very low, with only 1.9 ton/ha in 1998. Cassava was the main food crop and was used as staple food. Due to soil erosion and cultivation methods crop production was low productivity.

Huong Nguyen, like Hong Ha is also one of poorest commune in A Luoi district but in many ways people are even worse off. Their commune lies adjacent to Hong Ha along the road from Hue City to the A Luoi valley. Huong Nguyen was newly settled in 1995 under the complusory resettlement program of the government. Originally, these people lived in a remote and inaccessible mountain valley and very rich forest area, near the Vietnam-Laos border. When resettled they were allocated unproductive *Imperata* grasslands or wastelands that needed to be converted to agricultural fields. They also received some farming tools and some food to help them begin their new lives. Unlike Hong Ha villagers who moved back to their own homelands after the war, these villagers were forced to resettle and give up a traditional way of swiddening. Some time after being persuaded to resettle, they noted that a state logging company was extensively logging their traditional forests. Outsiders had begun to harvest rattan and other forest products in a non-sustainable manner. They wondered why this was allowed to happen while, in their new homes, they did not have enough to eat. They were told by state authorities that this new life would be better for them and their families. Many wanted to return to their own familiar forest lands.

**Our Participatory Research Approach**

Farmer's expectations are usually clear and simple: to meet their daily needs such as food, income, health and education. Hence, the project started with trying to improve farmers' livelihood first, then building their human and social asset base and at the same time working with state authorities to see if there would be more room for increasing their access to forests or other natural resources.

The asset framework recognises that it is important to use existing assets more efficiently and equitably but it is also important to build assets (the Ford Foundation 2002). It is important to start with "what people have," and not with "what they do not have." This

means that many different opportunities need to be examined and strategies to build assets designed. In our work we consulted closely with village partners and then with their help began trying to build assets in many different forms. One of the early surprises for us was that villagers constantly asked for cross visits to learn from other farmers and also asked for help and training as this related to agricultural production needs. Participatory action research and learning approaches were used to strengthen participation in the research process, from the identification of problems and possible solutions to the joint implementation and testing of options, including continuous participatory monitoring and evaluation as the work was undertaken (Fig. 2). Participatory learning approaches facilitate the inclusion of women and men farmers in all stages of the project.

***Development of participatory approaches with local people and stakeholders***

It is not easy to get men and women farmers and other stakeholders to participate in the whole process of action research. "Participation" is usually influenced by traditional top-down approaches that researchers are accustomed to. Researchers normally play all the main roles in all stages of research from identifying problems to implementation and evaluation and the levels of farmers' participation are low or nil. Through our work we have learned that a good participatory approach requires a variety of methods. These must meet the practical needs of the farmers and simultaneously enhance their confidence. Some of the ways we tried to improve PAR (and our CBNRM work) are described next.

*The importance of a good initial diagnosis*

Diagnosing the situation and research issues carefully at the beginning of the research process is very important. Meetings with villagers should be organised according to different groups such as women, men, and groups of the poor, groups of leaders. Most farmers are more interested in specific aspects of their daily lives and probably less interested in other things. For example, a good rice farmer is particularly proud of his or her production methods but another may be much more interested in their cattle which are looked after with great pride and care. In complicated production systems one will always find farmers who are experimenting on their own and researchers can learn a lot by working with them and learning from them. We were once told that "if you want to teach a farmer you must first learn from a farmer" and this is something that we began to appreciate more and more. Problem diagnoses by different groups were all different. Rather than leading to confusion, this helped researchers and villagers to understand the complexities of their situation better and develop further steps for any intervention (Table 1).

*Better understanding who participates*

Not all farmers have the same capacity to participate in PAR. Usually the richer farmers and those who have higher social status in a community participate more. Women and most poor farmers rarely involve themselves in these activities. To encourage participation, community leaders helped the project team to list and classify farmers according to different wealth categories (very poor, poor, middle, better-off and very rich). The list is based on many different social indicators, not just income. Another categorization was based on people's explanations as to *why* they wanted to belong to and work with one of several different production groups (we discuss these groups in more detail later on).

Box 1: A woman farmer said: "I never participated in any development activity supported by outsiders because I am poor. I feel that I do not have the ability to do such work for these projects. I am very happy to have attended the meeting organised by the University. I felt comfortable to explain what I need and what I think I can do to improve my situation if I have support from the University."

*Acknowledging different farmers' motivations to participate*

Farmers have different reasons for participating in PAR. The usual reason is to improve production and income as well as to gain direct financial benefits. For example, some farmers wanted to be involved in the project's home garden groups because they offered some financial subsidies for planting materials. However, their real intention was to use funds from the project to use for purposes other than improving their home garden.

Based on past government led interventions in Vietnam, farmers often expect financial support from "outsiders" for their needs. During initial meetings, villagers explain their situation mainly by "a lack of." Lack of money is often the highest priority based on farmer's perceptions. In our case we had to work carefully to explain that we were not a development agency but through participatory action research we wanted to learn with them and hoped they could also learn and benefit form us. A deeper understanding of the situation emerges after many long discussions and many evenings spent in the village. Upland people are poor and they often conceive being poor as lacking money. However, many of them also do not know how to spend money loaned from outside agencies, which usually resulted in heavier obligations and losses to farmers. We heard many unhappy stories on this from them. Hence, a careful analysis is required. Farmers and village leaders were also surprised to find an outside group that wanted to understand their situation and learn from them. This was very different from their past experiences, where development agencies and government officials arrived knowing all the answers already.

The social or economic status of a farmer or individual greatly affects problem diagnosis. CBNRM starts with an understanding of the current situation and diverse needs of many different groups in a community. We need to develop ways to help different groups overcome different problems, by themselves.

*Increasing farmers' participation*

Using participatory development communication (PDC) methods and tools can improve local engagement in PAR. Participatory development communication is a powerful tool to facilitate the involvement of community members through strategic utilization of various communication strategies (Bessette, 2004). We used PDC in a variety of ways. For example, the use of video cameras and the production of leaflets encourage farmers' participation. Through learning by doing we were trained in how to use these kinds of communication tools and media, for the benefit of researchers and local people both. As a result, we improved our way of interacting with farmers, learning from them, and also explaining things to them. In the project, farmers were able to learn new production methods more easily with the help of videos on fish raising, feed conservation for animals in each village and other learning materials. An information resource centre was also established in the commune, and stocked with books, technical handouts and other documents related to their needs. Farmers said that they liked this manner of supplying information as it made access easier.

When interviewing or working with farmers, the types of questions and manner of talking are important to assure good quality participation. In-depth topical studies were used to help understand their situation and ambitions better. Open-ended questions were used to gather general information. For example, we asked "What do you think about inter-cropping?" Farmers will answer this question differently depending on their own situation. But then we asked, "Why do you think it is good or not good?" Farmers began to explain in more detail the reasons behind their opinions.

We encouraged farmers to join together in groups with shared interests to hold regular meetings to share information about their activities. This helped in building their confidence to participate in other CBNRM activities and to engage more actively in local government and other types of meetings.

*Arranging for adequate time and a proper place to participate*
It is very important in the PAR process to consider the time and place of meetings. Most women (80% in our study) noted that they could not attend meetings in the community centre. The centre is usually too far from their houses and a place used mainly by community leaders and not by them. They stated that they were not comfortable in such a setting. Organizing meetings near their hamlets facilitated higher attendance and more active engagement. Even when they do not always attend such meetings they often drop in as observers and then discuss with their friends later what they heard and observed. Researchers and extensionists need to allow enough time to stay in the community at night and even participate in household farming work in some instances. One of the team's female researchers was able to do this quite often and found this a very productive way to learn and to build social relations and trust.

**Improving the material livelihoods of the upland poor**

Upland farmers in Hue and in many other parts of the country are adjusting or adapting to new realities and to new farming systems. The policy environment for rural development has also changed dramatically over the last decade. Following the principles of PAR and PDC (outlined above), our research project started by identifying farmers' needs and how to try to meet them. Meetings were conducted to identify problems and possible solutions. Partial results for some of our earlier meetings are summarized in Table 1.

Farmers' learning groups were then formed by inviting farmers to share their own interests and livelihood systems. These groups were built around different agricultural commodities. Each commodity served as an entry point to other linkages in the larger farming system, so the group interests were always broader than their main commodity. Groups included:

- Rice production group
- Pig production group
- Fish raising group
- Home garden improvement group
- Cassava production group
- Forestry production group

The following section reports on some hands-on experiences in improving livelihood options among poor farmers in Hong Ha, with a particular focus on the lessons learned as we worked with our rice and pig production groups. Rice continues to be the most important commodity for farmers in many parts of Vietnam. Pigs are of particular interest to women farmers who see them as a way of earning a bit of extra cash for their other family needs. Extra cash allows them to pay for medicines or care when someone in the family is ill or to perhaps to buy books or other school needs. When people in a village are desperate there is often a social system that they can rely upon but having some extra cash is also extremely important for women.

### *Rice Production Group*

Each production group initially consisted of no more than 15 farmers. Members began by discussing and explaining the problems they were facing, and identifying possible. The project team facilitated these farmer discussions, using their scientific and technical knowledge to complement the farmers' local knowledge.

As shown in Fig. 3, one of the problems identified by the rice production group was low rice yields and productivity. They developed possible solutions addressing directly the causes of the low rice yields/productivity as understood by them and the researchers. A range of solutions to be tested in their fields were discussed, as shown in Table 2.

The options chosen to be tested by the group included:

- Testing of 3 new rice varieties (TH30, Khang dan, D116), with the local variety as a control
- Various levels of fertilizer application
- Labour saving transplanting and direct sowing methods

In each experiment, about 3 to 5 farmers agreed to test one of the three selected options. The group identified the farmers who would apply the different tests. Other group members participated in evaluation and learning meetings at least three times during the growing season: (a) at the beginning during the planting and experimental design stage; (b) during the growth period of rice; and (c) at harvest time. During each meeting, farmers developed their own criteria to monitor and evaluate results and made decisions on which varieties were performing well, how much and what fertiliser to apply, and which cultivation techniques to use. The results of on-farm monitoring and evaluation were shared with others rice farmers in the group as well with non-members and other production groups. As such, the learning process was expanded to other farmers in the community.

Based on the lessons learned from the on-farm experiments with farmers, researchers need to take on facilitator roles to help farmers develop solutions based on their situation. Some farmers then could test new technologies while other farmers monitor and evaluate the results and thus learn from those who are testing the options. The adaptability of options or solutions to more farmers should also be discussed with the farmers supported by the researchers. The more familiar farmers become with new technologies and research results the easier it is for them to share lessons more broadly with others (Table 3).

Box 2: A farmer, Mrs. T reported that in 2003 she kept six cross-bred pigs. She used cassava roots and leaf silage to feed them. Sometimes she also gave them rice bran, fish meal or commercial feeds. After six months of growth, the pigs weighed up to 70-80 kg. The pigs looked very good. The farmer liked them a lot, so she did not want to sell. However, when the pigs weighed more than 100 kg, she could no longer supply enough feed to raise them. She and her husband decided to sell the pigs, but the middle-man offered a very low price (8,000VND or about $US 0.60 /kg) while the price in the town market was 11,000VND/kg. Her husband went to the town to meet staff of the abattoir. They told the farmer that if the number of pigs were enough to fill up a truck, then they would come to buy in the village at a price of 10,500VND/kg. The farmer told the people in the commune that if they could sell pigs together, they could get a higher price.

### *Pig Production Group*

Similar steps of problem diagnosis and formulating solutions were also developed by the pig production group. Due to lack of agricultural land, farmers wanted to try to increase their incomes from livestock production. Some years

ago, a number of projects had supported and introduced cattle to the commune. However, this only worked for middle or better-off farmers who had sufficient money to buy better breeds or to pay herders to watch the cattle.

Poor farmers in Hong Ha and Huong Nguyen chose pig production as it is more suitable to their conditions. Pigs can be fed with farm products, such as cassava, vegetables and other home grown or collected feeds. Some farmers had kept pigs in the past but their productivity was low. Pig production in upland conditions posed many problems such as low performance of pigs, poor raising or husbandry techniques, lack of suitable feeds, and diseases (Toan, 2003). As a results, three experiments were carried out by different farmers: raising Mong Cai as mother pigs or as sows (Mong Cai is a local breed favoured by farmers); raising cross-bred animals associated with the fattening of pigs for the market; and ensiling cassava roots and leaves as pig feed (cassava is widely grown).

In addition, two farmers were trained for one month in Hue in basic veterinary practices. This was supplemented by follow-up trainings in the village with the help of researchers and students. Vaccinations were also applied through veterinary service centres.

Meanwhile, other group members went to the district market centres to gather information on prices of the slaughtered pigs before selling to middlemen. The farmers decided to sell their pigs together to get a higher price (see Box 2). These activities helped build social capital in the pig production group.

However, not all options or tests developed through PAR were successful. Mong Cai sows were introduced to ten farmers. The sows produced good piglets in the first year through an artificial insemination (AI) service from the university. However, without the support of researchers or students, these sows could not get stud service since there were no boars in the village. As a result, Mong Cai sows stopped producing piglets and villagers decided not to keep their sows any longer. To solve this situation, farmers now usually pay cross-visits and obtain piglets from nearby Huong Van, a lowland commune near Hong Ha where sows produce high quality breed piglets. It is anticipated that some of the better farmers may again begin to keep and breed sows and they will then sell piglets to others.

**Lessons learned**

Over the last five years, livelihoods in Hong Ha commune have changed markedly as farmers have adapted technologies and modified forms and roles of local organisation (interest groups, women's union, farmers' association, hamlet leaders). They have greatly improved their management capacity (collect information, make joint decisions, evaluate outcomes). This has resulted in increased food production and substantial income generation. The lessons learned from these initial experiences are:

1. How to work with the poor and the disadvantaged groups in community. Since the poor and disadvantaged farmers usually do not participate in extension or development programs due to assumptions about their poor status and low technical knowledge or capacity to apply new technologies, it is important for researchers to understand and follow PAR and PDC methods with special attention to the poor. Secondly, farmers prefer to work in homogeneous groups where members have similar resource constraints and interests. It is also important that some farmers also want to belong to several groups. As farmers learn from one another and begin to adapt their own

production methods they gain greater confidence, judgement, and skill which helps them respond to new opportunities.

2. How best to adapt results to other people in the community or beyond; Research or development projects cannot work with everybody in a community at the same time. In this project, technical interventions were initially tested by a small number of farmers in the different interest groups. Other farmers had the opportunity to learn through the processes of research, communication and farmer-to-farmer interactions. Adapted technologies were evaluated by the farmers, who shared the lessons with other farmers. The role of researchers was generally limited to facilitating the learning process from farmer-to–farmer in a commune and then at a broader level. Farmers themselves (or perhaps the provincial extension service) need to do this and researchers can only facilitate. The researchers' initial contribution was diverse given that each group and each farmer had different interests and different resources so they adapt or reject new methods based on their own situation.

   There is little sense in trying to push a technology farmer if farmers are not interested. For example, farmers planted new cassava varieties as on-farm experiments to find the best for cultivation. Some farmers would prefer a particular variety while others would not. The reasons for this could be explained by their points of view regarding yield, market value, or taste depending on the purpose for cultivation and individual preferences.

3. How to work with other line agencies for the poor. The results of our research would be more significant if applied and expanded to other areas and supported by other agencies and policy makers. In Vietnam, the agricultural extension system has a top-down approach, from central government to grass-roots communities. Their extension system aims to develop and transfer new production technologies in agriculture, forestry and aquaculture to farmers, especially for upland people. Hence, agricultural extensionists play critical roles in linking up the poor with different line agencies. Agricultural extension agents of province and district levels have cooperated in our research project as working partners. As a result they are now beginning to use farmer-to-farmer learning approaches in their own work.

Extensionists were given opportunities to participate in PAR processes themselves. Experiences from Hong Ha were shared with other communes in A Luoi district. Aside from farmer-to-farmer learning, extension meetings with farmers can bring ideas to larger numbers, and other areas with many other communities, and given an opportunity to learn from the work more broadly. The process of working with different groups must be understood and constantly evaluated. It is necessary to involve line agencies in this.

Box 3: The deputy head of the district agricultural and rural development sector of Aluoi said that results from the CBNRM research are very useful for them. The Agricultural sector of the district will organize farmers from other communities to come to Hong Ha to learn how the poor adapted technologies. The deputy head also announced that a participatory approach will be applied in planning activities with farmers in the district.

Another important element of working with agencies is the participatory monitoring and evaluation process in which evaluation criteria were developed by farmers with support from extensionists and researchers. Evaluation workshops were organized regularly at community and district levels. Formal and informal participatory evaluations were always part of our work. In one of the earlier evaluations with both women and men we were surprised to learn of the very high

importance given to cross farm visits and technical training. Farmers ranked this as their second most important priority (after work on rice). We adjusted our work accordingly. Another priority was that of building social assets in different ways, once basic livelihood needs were more secure.

**Building Assets**

From our work we have learned that agricultural production is an integral part of CBNRM or any livelihood system. Natural resources management in complex uplands production systems requires that both private and collective resources be managed in complementary fashion. Building assets (which includes access and rights to natural resource use) is essential to the process of poverty alleviation (Ford Foundation, 2002).
Assets are broad array of resources that enable people and communities to exert control over their lives, expand choices and participate in their societies in meaningful and effective ways. Assets as conceptualized in the research project include:

- Financial assets such as credit and savings, and financial resources that local people can have the opportunity to access and utilize;
- Natural resources in the uplands, such as forests, non-timber forest products, wildlife, land, and livestock which can provide communities with sustainable livelihoods with significant cultural value as well as environmental services, such as a water supply and quality;
- Social assets which include the capacity to build productive relationships and organizations between people in the community and with the outside world (or terminate these links them when harmful);
- Human assets including knowledge and skills to access services, market, health care and other opportunities.

Upland people are often deprived of these assets. Being poor makes people less secure in their livelihoods and also reduces access to education opportunities, health services, and other government programs. The project has worked with local people to understand their asset situation, support local organisations and build assets of individuals in the community.

Box 4: Pig raising group regulations:
- Members are poor women
- Willingness to join group
- Women who borrow money from the group have to pay back after one year. In case of unforeseen events, the group will negotiate case-by-case default arrangements
- Interest rate of 0.6 % per month
- Monthly meeting to review activities
- Develop training needs to request service from university or extension
- The group select the leader and credit recorder every year

In most communes, social assets are constituted by formal and informal organisations. Formal organisations are established to manage community resources according to current government systems such as the People's Committee of Commune, Farmer's Association, Women's Union, among others. These organisations have functions and responsibilities in developing upland communities. The research project has supported and worked with all three organisations very closely as they have long-established relationships to farmers and the poor within communities. Many meetings were held with these organisations to understand their roles, functions, strong and weak points and formulate development plans with them to help build and empower their groups and their organisations. Some of the results of this analysis are shown in Table 4.

The farmers' production or interest groups discussed above formed their own regulations on how to select members, how to request financial or technical support, and how to work together (Box 4).

Improving the skills, knowledge and confidence of leaders, individuals in the groups and commune organisations is one of the most important forms of human asset building. Participatory learning and evaluation approaches were introduced and applied by local organisations for their own needs with users encouraged to develop their own priorities and plans and make greater contributions to community plans and activities. Training and study visits were also organised to provide learning opportunities and build confidence, especially in relation to outside groups.

In 2002 and 2003, study visits to China and Thailand were organised for commune leaders and others in their local organisations. They were given the opportunity to learn from innovative upland farmers and commune groups in these countries. The study visits helped create changes in the attitude of leaders. They then became more active and motivated and understood their own situation better. As a direct result of our capacity building efforts Hong Ha was treated as a special case in the province in order to test different delivery approaches for local government support. The government of Vietnam currently has a special poverty alleviation plan for the 135 poorest communes in the country. Hong Ha is one of these, and will receive financial support (about 30,000USD/year) for development activities. Hong Ha is the first commune in Hue province that has gained the autonomy to develop its own plans for spending the money. The community management board of Hong Ha is considered as the best among the upland communes in Thua Thien Hue. Its Chairman now also sits on a national committee for minority people and this provides further opportunities to share local lessons and provide inputs into policies and programs at a national level.

As far as financial assets are concerned, the Women's Union and the Farmers' Association of the commune were trained in managing small revolving credit schemes with initial capital investment from the project. The fund started with about ten farmers in the commune. After three years, 47 women had obtained benefits from the fund, which is entirely managed by local members. With this experience in credit management both associations submitted a successful proposal a much larger credit fund from an international NGO. They received about US$ 20,000 and started work in March 2004.

Box 5. Mr. H., chairman of the People's Committee of Hong Ha commune said that since they have been working with the CBNRM project of the university, the farmers have improved their livelihood, as many farmers know how to apply new production technologies, they have the opportunity to learn from each other and from outside. The lessons are being applied by local government, where participatory planning and monitoring of the annual f commune work plan has been introduced. . Local people are more involved and local government leaders now feel more confident in their daily work.

**Improving access to natural resources**

In the uplands, access of local people to non-agricultural lands and forest resources is essential to their livelihood. In this section we discuss access to forests to highlight the third pillar of our work. With over 70% of the country's total land area covered by forest (often badly degraded) and 20 million people living in upland areas these resources can

play an important role in the country's development (Quy, 1995; Rambo, 1995). Forest degradation is ongoing due to the expansion of the agricultural frontiers and a drive by the government to cultivate export crops, improper policies or programming, and illegal cutting of timber in some cases. Maintaining existing forest or controlling degradation is a major challenge in efforts to reduce poverty and allow for sustainable development of the uplands. (Bao, 1999).

In Hong Ha the agricultural land base is limited whereas forest lands cover 78% of the land area and unutilised lands or steep slopes covered by *Imperata* grass about 20% Forests help supply uncultivated foods, income from non-timber forest products, materials for house construction and traditional medicines for human health care. Sustainable extraction of these products need not degrade forests if well managed (Bao, 2000). It is important to note that the forests in the study sites are badly degraded. They have generally not recovered since the Vietnam war years; only in some valleys has recovery begun to take place.
Under Vietnamese Land Law (1993) all land belongs to the state. The state can assign user rights to individual farmers or legal organisations for a certain time. All the lands in Hong Ha once came under the jurisdiction of the commune, but now local people are given user rights only to agricultural lands. Forestry lands are managed and controlled by State forest enterprises or government forestry organisations. The Forestry Department of A Luoi district has the authority to check on timber extraction and protect the forest against illegal timber cutting. But most of the forest lands fall under the provincial-level Watershed Management Board.

Forest policies and management are the big national issue in Vietnam. There are many programs by the central government to protect and reforest using central or local government funds. However, these programs are often implemented differently in different districts and can create, or exacerbate, local conflicts. Programs and funds often do not even reach the local level. Duties and responsibility of forestry departments at different levels overlap and are unclear (Vo Van Du, 2003). In addition, the manpower for forest security is not sufficient to protect large areas and to stop illegal cutting of timber.

By the early 1990s, reforestation was encouraged by the UN World Food Program and national "327" programs. The barren hills and unutilised lands were used for planting forest with Eucalyptus and Acacia species. The aim of the programs was ostensibly to increase the surface area covered by forest in the country.

But program implementation has been problematic. For example, the use of single species such as *Acacia mangigum* or *Acacia eucoliformic* for large reforestation projects to protect watershed areas has been undertaken, yet this species in large scale plantations is only useful for pulp production, and provides none of the benefits local people seek from forest lands. Local people are paid for their labour in planting and protecting tree seedlings, but have no rights to use the forests or products. Although the government has issued a number of more recent decrees on forestry and in some cases allocated lands to individuals or organisations, these have not been implemented in Hong Ha.

In general, most forestry policies and management has focused mainly on protection, creating conflicts between forest protection and livelihood development needs. In line with this, the government enacted regulations under Decree number 178 (November, 2001), which unfortunately is difficult to understand and has not been explained to local people. One important article is that local people can harvest up to 20% of the total biomass yearly in protection forests, and about 80-90% of the products should belong to them (Sen et al.,

2003). In our study this question was raised with the Watershed Protection Board; how can local people share in the costs and benefits in forest management. Discussion continue with co-management systems and benefit sharing being our ultimate goal.

***Experimenting with co-management and non-timber forest products***

As a first step towards possible co-management regimes, the project organized meetings with local farmers, commune leaders, district extension services and provincial agencies responsible (especially the Watershed Management Board) to agree on possible land and forest management options. Using a participatory approach, the group selected non-timber forest products (NTFPs) as one area of high potential. This could be developed by introducing valuable non-timber species into the existing forest plantation. With support from all the key stakeholders, the research team developed a trial to test the introduction of the Do bau tree *Aquilaria crassna* in the *Acacia mangium* forest plantation. This was found to increase the density of the protection forest and provide income to farmers. Another experiment was to inter-plant bamboo in the forest and along the riverbanks to reduce soil erosion, while providing a fast-growing cash crop for farmers.

Through these interventions farmers have been able to increase their income and extend their formal resource tenure rights in forest areas. The lands with *Aquilaria crassna* and bamboo plantation have been recognised and legally allocated to farmers in the commune. The NTFP plantation had been demonstrated by the research project not to cause any problems from an environmental perspective and is now legally- recognised by the State (citation of detailed research results from trials?).

The NTFP models established in Hong Ha with stakeholder participation are now informing the forest management strategy employed in A Luoi district by the agricultural and rural development sector. *Aquilaria crassna* and bamboo plantation have been recognised by the District People Council in 2004 as production opportunities throughout the district. The budget for the district's agriculture and rural development includes funds for seedlings and technical support in forest plantation. Lessons learned are also shared with other communities in A Luoi. NTFP production is becoming an important element of the provincial agricultural extension service. The Bo Watershed Protection Board is now using *Aquilaria crassna* as well, instead of only Acacia, in its reforestation projects.

More recently, the project is working together with several of these government agencies to implement joint forest management where benefits and costs are shared between the government and local farmers. This is an important new research avenue that we will explore further. In meetings with A Luoi district officials, research on participatory forestry management options has been proposed by local government. . The researchers hope that in the next several years, options of co-and joint management forest tenure will be tested in A Luoi.

**Conclusions**

Commune leaders have told the research team that this CBNRM approach is very different from others projects. Giving poor farmers, including women, the opportunity to improve their understanding and work on their interests builds their confidence and skills. In the past, the ideas, priorities and local knowledge of commune leaders and other local people were mostly ignored by rural development experts or agricultural extension services. Our

experience suggests that poverty reduction in heterogeneous upland areas of Vietnam is much more effective using participatory tools and fostering adaptive learning.

We summarize key conclusions of the action research project in Hong Ha and neighbouring Huong Nguyen communes as follows:

1. Improving their livelihood is the first priority of the upland poor. Not all farmers have the same interest and capacity to improve their production and income generation, so participatory approaches must make special efforts to engage all local people, especially the women and poor.

2. Successful new technologies and institutions can best be disseminated by structured farmer-to-farmer learning activities, and by extension agencies which use participatory tools and methods.

3. The key lessons learned from forest management in Hong Ha is that resource and land tenure must be identified clearly along with other rights and responsibilities for forest protection in order to ensure local benefit. The direct involvement of different stakeholders from various levels of government is vital for learning, building consensus and resolving conflicts.

4. The final goal of CBNRM is to achieve better natural resource management options in which the local community plays an important role. Increasing access to resources and building assets of upland people for collective action help to build social equity. Long-term resource management options should be balanced with the short-term needs of local people and other stakeholders.

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