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Pilot Schemes for Community-Level Forest Management in Lao PDR: A case study from Nam Ngum Watershed

Abstract

Community based management of common resources has increasingly been recognized by government agencies in the Lao PDR. Since the late 1980s, government policy on natural resources management has been re-examined as part of a complete and fundamental overhaul of the legislative framework to devolve natural resource management rights and responsibilities to local communities. The new resource management policy and resource tenure related legislation is embedded in broader development principles such as the consolidation of the macro-economic reforms, the improvement of the performance of the public sector, improved living standard for the whole population and halting the degradation of natural resources.

While rapid resource exploitation and degradation has accelerated with the reforms associated with the New Economic Mechanism, there have been concomitant changes in resources use and management. A decentralization policy on resource management has been introduced in the form of allocating resources (land and forest), which were previously administered directly by the State, to local authorities and individuals.

Since 1989, the government has issued new resource management legislation with an emphasis on raising levels of responsibility and stewardship among the population, and promoting awareness of costs as well as benefits of resource exploitation. Particular attention has been paid to shifting cultivation and illicit logging. At the same time, provincial, district and village level participation in resource conservation and management has been promoted, as has a sense of local ownership. Such ownership is based not on legal title but on an acceptance by the government of *de facto* rights of management by local people. This in turn is based on the central state's awareness of its limited capacity to manage at the local level, leading to an approach that emphasis co-management in use and conservation of natural resources.

However, in the absence of prior experience of this type, local government officials have considerable difficulty in achieving the potential for more effective and sustainable resource use based on local systems for common property management. It has proven difficult to bridge the gap between the legislative intentions, the implementing regulations at the national level, and their interpretation and implementation at the local administrative levels. So far the regulations reach the local level (district and village) through the dissemination of written official directions, which results in different interpretation to implement those legislation in different localities. Central authorities are quite limited in their capacity to manage resources locally due to lack of personnel and budget.

Very few investigations of policy implementation efforts for community-based resources management have been carried out. Several of these have been conducted by the Department of Forestry within the Lao Ministry of Agriculture and Forestry, through different donor-supported programs and projects. This paper will highlight recent experiences with the implementation of the new national resource management and land use allocation policies, through case studies which reveal the implications for both local and national governments.

The cases provide a better understanding of the special conditions of common property management at the community level, to provide feedback to the local government's efforts to implement national policy. According to the legislation related to natural resource management, co-management of natural resource already takes place. Positively, traditional customs, rules and structures, in which local people have individually and collectively played a significant role in conserving and managing resources, are seen as a basis for local participation in resource management, particularly in areas long used for settlement and agriculture. In many cases, resource exploitation is regulated by traditional beliefs, for example that trees house the spirits of dead ancestors. Apart from land and forest resources, water resource is another common management and conservation interest at local level. Upper watershed areas are usually protected, particularly if they are at the head of streams that feed local irrigation systems. Traditional water management is also long-standing in the form of small-scale weirs and channel construction and maintenance, together with the principles for water allocation. Nevertheless, considerable work is required to bring traditional and state management systems closer together if co-management is to work effectively. This requires an understanding of ethnic differences in land, water and forest management. Traditional forms of resource tenure and management have yet fully to receive formal recognition. At the same time the tools to assist local resource management are still in learning process and require some testing with different cultural conditions of the ethnic people.

Several of the cases involve different districts within the strategically-important and prominent Nam Ngum Watershed in central Lao PDR, where District officials were specially trained in participatory community-based resource planning methods. (Paek, Phoukood, Vangviang and Long San Districts). Some tools and methods are introduced to district officials and villagers to collect necessary data and information and then make the analysis based on those collected data and information to identify how the resources have been managed and could be used sustainably for the future.

National background

Laos is a small land locked country in South-East Asia. The Lao People's Democratic Republic was established in 1975 after three decades of independence fighting. Since 1986, economic reforms announced by the Lao government under the title 'New Economic Mechanism' have signified a shift from a command economy toward a market economy.

Production in Laos at every level has always been heavily dependent on the country's natural resources. At local level, villagers' lives are mostly subsistence-oriented and based on land, forest and water resources. At the national level, dependence on these resources is similarly high. The country's clearest comparative advantage is thus in its natural resource base, notably forest.

With the country's local and national economic dependence on natural resources, the government is faced with the difficult task of simultaneously promoting national development, taking care of livelihood requirements and maintaining a careful and balanced policy approach to resource management. The key challenge is promoting sustainable use of resources, both to serve local needs and enhance national income.

The importance of land, water and forest resources to the Lao economy is evident in the fact that, whereas agriculture accounts for only 15 per cent of national export income, it makes up more than 40 per cent of GDP. Of course, much of this lies outside the cash economy. Conversely, forestry contributes about 40 per cent of export earnings and 15 per cent of GDP (World Bank, 1993). Development of forest and water resources is one of the main government priorities. In particular, hydro-electricity is targeted as the base both for national industrial development and for increasing foreign exchange earnings.

Although the country has only 4.5 million inhabitants on a land area of 236,800 sq. km, 90 per cent of the land area is rugged uplands. Soil fertility is generally low. About 80 percent of the population live in rural area often in remote location and shifting cultivation is the major practice.

Several ethnic groups are present. The diversity of ethnic groups are simplified officially by division into Highlanders (Hmong), Uplanders (Lao theung) and Lowlanders (Lao loum). Livelihood vary by ethnic group, but also within groups. Most of the land with greatest potential has already occupied, and lowland Lao have access to the most fertile and easily irrigable wet rice land. The largest highland minority is the Hmong, animist shifting cultivators who migrated from Southern China since the 19th century.

Legal framework and decentralization policy for resource management

Since the establishment of Lao PDR, the government has issued and disseminated rules and regulations on resource use. Until recently, however, little attention was given to questions of resource tenure or prohibited land uses. This was because, under the economic conditions

prevailing after the wartime destruction and displacements, emphasis was placed on local self-sufficiency at provincial and even district level. Most measures and resource management were applied flexibly, with priority given to catering for basic economic and immediate livelihood rehabilitation needs following the war. Normally, co-operatives established under the socialist system treated resources as common property. In fact, poor management mean that co-operatives were often a pretext for open access as individuals struggled to rebuilt their lives. Often this led to a rapid degradation of the local resource base, and abandonment of existing traditional resource conservation and management practices. In the case of large-scale resource development, planning was centralized, with no community involvement except to inform local people of decisions made. Local people had no role in planning such resource exploitation or reaping any of the benefits. Under the co-operative system, perhaps the main constraint on resource exploitation was the limited development of markets, restricting the extent to which resources became commodities. Likewise, economic isolation and stagnation held back large-scale forest and hydro-power exploitation.

While rapid resource exploitation and degradation has accelerated with the reforms associated with the New Economic Mechanism, there has been concomitant changes in resource use and management. Since 1989, the government has issued new resource management regulations with an emphasis on raising levels of responsibility and stewardship among the population, and promoting awareness of costs as well as benefits of resource exploitation. Particular attention has been paid to shifting cultivation and illicit logging. At the same time, provincial, district and village level participation in resource conservation and management has been promoted, as has a sense of local resource ownership. Such ownership is based not on legal title but not on an acceptance by the government of *de facto* rights of management by local people. This in turn is based on the central state's awareness of its limited capacity to manage at the local level, leading to an approach that emphasizes co-management in use and conservation of natural resource.

Public administration in the Lao PDR is centralized in structure, but pragmatic in implementation. Public policy is made under the leadership of the Communist Party by senior government officials, subject to the legislative review and endorsement of the National Assembly. National line agencies are charged with implementing this government policy and programs. In each of the country's 17 provinces, the provincial governor acts as the representative of the State, and oversees the functioning of provincial departments which exactly parallel their national agency counterparts. Thus, the provincial department of Agriculture and Forestry is guided on policy matters by the national Ministry of Agriculture and Forestry, but reports also to the provincial governor in administrative terms. Similarly, at the local (district) level, local officials interact directly with village leaders and leading local farmers, following policy instructions issued by the Ministry but interpreted and enforced by the provincial agencies through which they have passed. Since the establishment of the socialist republic, formal decision-making authority has rested almost entirely at the senior levels of national agencies in Vientiane. However, *de facto* control of resource use and exploitation has been strongest at the level of the provincial governors and their senior officials. And it is only at the district level that the government apparatus interacts directly with local people.

Thus, when it comes to management of natural resource commons, and the struggle to interpret and implement new central policies, the district level is crucial. The district officials take their

orders directly from provincial superiors, but then have to reconcile these with local realities. In a command-and-control style socialist economy, there was little need to devote much attention to such reconciliation, and the mechanisms for official communication have been mostly top-down as a result. But the new policies of the government, because they are intended to strengthen the role of local communities in resource management, will require much greater flexibility and initiative from district officials to support and respond to local resource management issues. This dichotomy between past experience of local government-village interaction and current need lies at the centre of this paper.

Resource management in Nam Ngum Watershed

Background information

The Nam Ngum river is one of the major tributaries of the Mekong. The watershed and the study is defined as the area drained to the Nam Ngum reservoir (Figure 1). The watershed is important nationally for electricity production, and locally its resources are main source of livelihood for approximately 80,000 mainly subsistence cultivators and close to 200 communities of diverse ethnic groups living above the dam.

Administratively, Nam Ngum watershed covers parts of two provinces (Xieng Khouang and Vientiane) and one special zone (Saisomboune). The largest community is in Phonesavanh, Xieng Khouang province, where is many ethnic groups settle for many decades. The lower part of the watershed, near the dam, scattering communities have been settled mostly during the war in last 30 years, especially along road number 13B in Vangvieng District of Vientiane Province and Saisomboune Special zone.

Improved watershed management has become a critical priority in Lao PDR. Several key influences have created this priority. At the most general level is an awareness that sustainable development needs to be based on stewarding the country's natural resource endowment. Intensification of resource use and new demands on watersheds for hydropower development make sustainable management an urgent task. The diversity of land, forest and water resource users in the watershed creates complex interactions as well as management challenges.

Resource management in Nam Ngum Watershed was the subject of a preliminary study carried out by the Centre for Protected Areas and Watershed Management (CPAWM), Department of Forestry (DoF), Ministry of Agriculture and Forestry, Lao PDR during 1992 and 1993 through the support of the International Development Research Centre (IDRC). This study involved a combination of data collection on resource use, pressure, competition, conflict and changes over the whole watershed, using participatory research methods in two communities. Findings and implications of this study can be summarized as follows:¹

- ◆ There is substantial pressure on natural resources and food production systems in the Nam Ngum watershed area. *Implication:* significant changes in land, forest and water

¹ Final Report on Resource Management in Nam Ngum Watershed, Lao PDR.

use and management are required in order to achieve a sustainable pattern of production.

- ◆ The nature of resource degradation and resource conflicts varies significantly from one part of the watershed to another, based on a range of social, historical and ecological parameters. *Implication:* an overly generalized approach to watershed management should be avoided in favor of one based on local knowledge and participation of communities and local authorities in each area.
- ◆ Community management of forest, land and water resources is long-standing and widespread throughout the watershed. *Implication:* local/traditional practices and arrangements should be seen as the starting point for resource management initiatives and planning.
- ◆ Resource competition and conflicts can be identified at a number of levels: within the communities; between communities; between local people and external claimants (notably forestry and hydro-power); between ethnic groups with different agro-ecological practices, or differently stated, between upland and lowland production systems. *Implication:* there is a need to develop conflict pre-emption and resolution procedures at a number of levels, including more participatory impact assessment procedures for externally conceived projects.
- ◆ Ambiguity of both individual and community resource tenure is a basic source of competition, conflict and resource degradation. *Implication:* demarcation and definition of resource tenure at the village level need to be backed up at the District and other levels.
- ◆ At the District level, division of duties is often unclear; District level staff lack of technical and organizational experience; and District staff tend not to be involved in activities at village level, relying more often on written directives. *Implication:* District level staff need support, including technical and organizational training and experience in community liaison, in combination with more clearly defined duties in the field of forest, land and water resources management.
- ◆ From a local perspective, there are ambiguities in government policy regarding rights and duties of village, district, provincial and national authorities. *Implication:* the rights and duties regarding resource management, planning and enforcement need to be clarified.

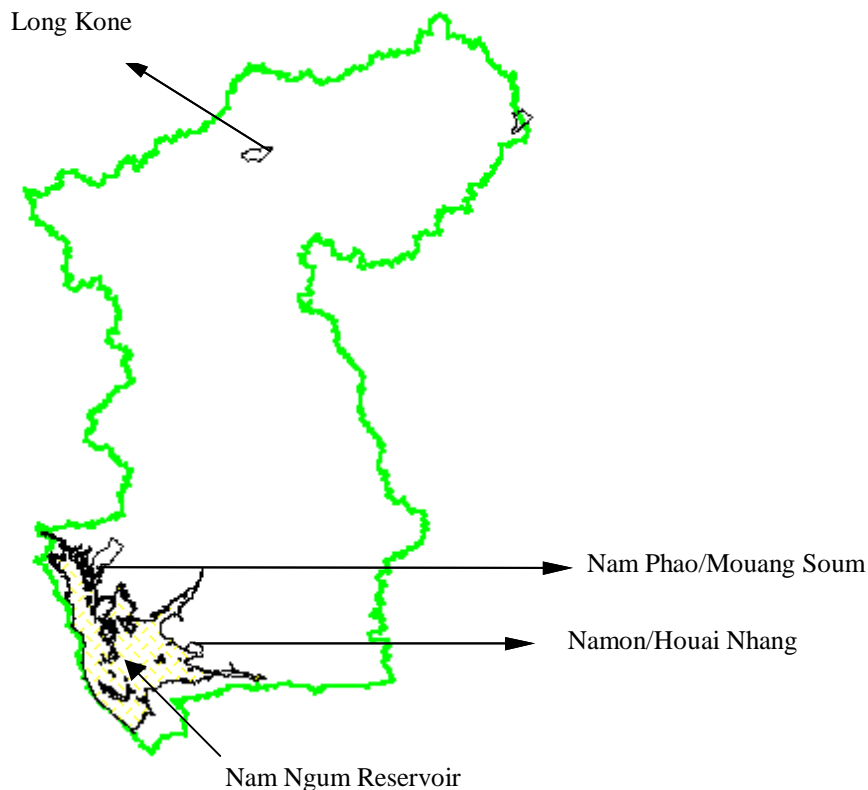
A second study by CPAWM attempted to test ways of addressing these issues as a way to follow-up these findings. Four pilot areas (Figure 1) were selected mainly to represent the range of management challenges identified during the first phase of the study. Each pilot area has its own characteristics in terms of resources and socio-economic conditions. Baseline information related to three areas can be summarized as follows:

Namon and Houai Nhang villages in Long San District

These villages are located on the edge of Nam Ngum reservoir and house two different ethnic groups with different temporal settlement period but shared resources. Namon village used to be in the area flooded by the Nam Ngum Reservoir, which means that it is representative of a community whose resource base has been impacted by hydropower development. The village was re-established close to its original site, but above high-water line, in 1975.

During the 1980s a Hmong community was established at neighbouring Houai Nhang due to the government policy on resettlement and administrative manageability. This reflects the general situation arising from the government policy of resettling shifting cultivators to reside in closer proximity to lowland cultivators.

Figure 1 Location of Study Areas (Nam Ngum Watershed)



Nam Phao and Mouang Soum

Mouang Soum is an old established community with a well established and hitherto sustainable resource management system. The community represents a traditional land use pattern in which wet paddy is the main farming system supplemented by shifting cultivation for other staple crops adjacent to the paddy fields. Mouang Soum has been targeted as a resettlement site for Hmong returnees from Thailand and from the surrounding uplands and reservoir-edge communities. This is leading to a sharp increase in demand on the resource base.

Nam Phao is a recently established community (in the 60s) and adjacent to Mouang Soum village in the east. The people in this community are from diverse geographical and ethnic origins. The clearance and degradation of resource in Nam Phao have spilled over into forest

traditionally managed and protected by Mouang Soum villagers. More problems and difficulties arise when new administrative boundaries have been drawn.

Longkone, Phoukood District, Xieng Khouang Province

Longkone is a recently established village, having settled at its present location since 1994. Settlement in the area has been affected by periodic insecurity and displacement reflecting one of the key background problems that has historically constrained the livelihoods of most communities in Nam Ngum Watershed. Longkone and surrounding area are eyed by the District as a potential recipient site for resettled communities from elsewhere, lending extra importance to a participatory approach to establishing the limits of sustainability in agricultural production.

Community Based Resource Management and Conflict ***Resource Pressure***

Forest and land resources are considered as scarce resources based on their declining quality and quantity. Although tenurial rights to these resources are not yet formalized, they are often clear to local communities and individuals in terms of customary rights in accessing and using these resources. Indigenous² communities have mechanisms to establish rules to protect and use these resources, and usually have been able to reach agreements with neighbouring indigenous communities on boundaries and access rights. Population growth leads to greater pressure on these resources, and on traditional management mechanisms. However, in-migration leads to a situation in which these traditional rules are not recognized by newcomers, leading to much faster encroachment and exploitation of previously-managed resources, especially common property. In some cases, most of the conserved and protected forest areas are for the head of water sources to retain and regulate water to the lower paddy developed by the indigenous communities. Typically, wherever new and indigenous communities are located adjacent to each other, there is conflict on resource tenure and utilization. This is the case, for example, in Houai Nhang and Namon and Namphao and Mouang Soum.

Land use

Paddy land is considered as the most important and productive type of land use for all communities in the watershed. So far, rice is still a major staple crop production for all Lao people. Meanwhile the potentials land for paddy development is geographically highly limited in the seasonally-dry Lao mountains. In most cases, arable land in lowland area is occupied by lowlanders and traditionally customary rights toward this land has been recognized by individual and communities nearby.

Shifting cultivation is another land use feature, that is generally found in most upland cultivation. Though lowlanders are engaged in paddy cultivation in lowland areas, many of them are also

² Group of people who originally occupied and settled in the area and can be considered as the people who have priority rights to use the resources in traditional system.

practising shifting cultivation for supplementary crops (and alternative varieties of rice). More than half of the population in the study areas have practiced shifting cultivation.

As the population increases among both lowland and upland farmers, the requirement for paddy land is also increasing. Currently the ratio of population is about 20 person per ha of paddy land, on which the average yield of one hectare is about 1.5 tons. These yields are insufficient compared to the population requirements. Supplementary rice production is required in the form of shifting cultivation. The new government policy on shifting cultivation stabilization has prohibited the rotation of slash and burn cultivation for 3 years in order to promote the investment of land development in rural area as well as to diminish encroachment on natural forests. The network of agricultural extension is in poor service and with unskilled and inexperienced personnel at district level, so upland cultivation is still carried on in an unsustainable basis. Soil and land use in sloping areas is lacking of soil improvement and conservation, which results in decreasing yield when farmers grow crop in the same plot for more than two seasons.

Forest Management

Forest and its products are an important source of food, medicine, construction material and income for rural population. Usually, local people use forest products for their daily livelihood. However, some Non-Timber Forest Products (NTFPs) are in high demand for both local and international markets, in accessible areas. Under these kinds of market pressures, previously low-value forest products become subject to over-exploitation as open access resources. Conflicts over these resources increase with their value, between individuals in the community, different communities, and outsiders.

According to the Forestry law, communities have tenure rights to forest and forest land that can be obtained by (i) transfer, (ii) allocation and (iii) inheritance. However, customary rights to use of forest and forest land are recognized. Customary use includes the collection of non-prohibited wood for housing material, fences and fuel, the collection of forest products, hunting and fishing of non-prohibited species for household consumption and other uses following custom (Article 30, Forestry Law).

Village authorities are accorded significant rights and duties to organize and develop local regulations to practice the use and allocation of forest, watersheds, wildlife and natural environment appropriate to the actual conditions of the village. Practically, most of the villages had carried out land use zoning as the first step for village land use plan. The land use zoning includes the classification of forest based on the utilization purposes such as production, conservation and protection forests. Normally, the village authorities, with the consultation of district forest officials, have the rights to prepare village's regulation to manage and protect these forests. Through the previous decree of the utilization and management of forest and forest land (decree 169/PM) resulted in the demarcation of forest and land resources at village level for the purpose to involve local people in natural resource management as well as to decentralize authority to local government agencies at district and village levels. In term of resource management and administrative purposes the demarcation process had been negotiated and

agreed among neighbouring villages. District authorities has played the key role to provide legal and technical consultations to local communities before any decision can be made.

To manage local resources the village committee plays the key role in any decision making on the utilization as well as conflict resolution. Traditionally, apart from the rights to access and collect NTFPs, villagers can cut the trees for building their house from the production forest as defined by village. Normally, local arrangement and the request to village's committee (socio-economic development committee) are necessary. Legally, village leader, through the consultation of village committee, is able to authorize villager to cut the tree with the volume less than ten cubic metres of controlled species³ for their house construction. (MAF, 1992). For prohibited species the permission from District level is required. Fuel wood and NTFPs are considered as open access resources, however, fuelwood can be collected only from the dead trees and abandoned timber and branches in production forest and fallow land.

Resource Management Conflicts

Conflict in Land use

In rural areas, where shifting cultivation practice is still continuing in the uplands, land resources are considered and understood by local people as a common property resource. Villagers have their customary rights to claim and use the land based on the capability of the family labour in clearing and develop the land. Shifting cultivation is considered as a sustainable farming system if the land area is sufficient to rotate the practice every 10 to 15 years. However, due to the present situation of population growth, the rotation is shortened and the available sloping land cannot absorb this cultivation practice using traditional methods.

Shifting cultivation is also related to water resource conflicts. Shifting cultivation has always been practiced on top and along the edge of the mountain ridges where the water source for lowland paddy in the lower slopes originates. This results in land use conflict between communities and households who practice and use the land for different kinds of cultivation practices. In some cases (Namon /Houai Nhang and Namphao/Mouang Soum), land use conflict of this type is related to the lack of (or decline of) water resources for paddy expansion.

Conflict in Forest Management

Forest resources, in the current local context, are still regarded as common property. Forest lands or resources are not allocated to households, but households have some access rights to harvest and use of these resources, according to community and district (central) regulations. Forest resource rights can also be allocated to commercial operators by government authorities (even if these resources are already used by local people). Meanwhile the customary rights of local people are formally recognized by the regulation of natural resource management at the national level.

In 1994, with the new policy on territory based-management, administrative village boundary demarcation was introduced as a first step for land allocation and land use zoning at village level.

³ According to Forest Inventory Regulation, tree species accounted in inventory classified as prohibited, controlled and non-commercialized species.

In practice, each village should identify their own territory for management and administrative purposes, including land use zoning for forest, agriculture, infrastructure at village level. This will yield a general, territorially-based and locally-validated village land use plan.

In principle, such a land-use plan should resolve conflicts and strengthen management by making boundaries and responsibilities for land use management more clear. However, in the case of Namon and Houai Nhang, the two communities have not reached an agreement to divide their territory because community members feel it may be to their advantage not to do so. Namon villagers are afraid that they will lose their traditional rights to use forest resources claimed and occupied by the more recently-arrived Houai Nhang villagers.

In their defense, the Houai Nhang people also claimed that without their management and protection those forests would have been cut by other villagers and small businessmen who try to encourage people to cut and sell the trees. Here is a case where attempts to clarify resource rights and boundaries has met with resistance instead of support from local and traditional resource users. Indeed, the new policy may actually have made the conflict worse, because local negotiations between village leaders seemed to have led to a previously-acceptable compromise which was weakened by the new legislation.

Experience from the study area indicated that market opportunity also create the competition in resource use. When a new resource exploitation arises, or when previous traditional management mechanisms break down or are weakened, or when a new formal management regime is introduced without suitable management guidelines or enforcement mechanisms, the familiar open access situation results. This is true of both forest resources as well as others. For instance, introduction of commercial fishing in the Nam Ngum hydro reservoir has led to over-exploitation of stocks, including harvesting in spawning grounds, despite management rules intended to prevent this. It is the same as the gathering of Non Timber Forest Products like rattan, bamboo, cadamon, aromatic wood and others, for which no traditional rules for collection/exploitation exist at the village level.

The situation of Namon/Houai Nhang demonstrates a couple of important issues for common property management in Laos:

- careful attention must be paid to the allocation of rights to different resources between newly-resettled communities and those communities which previously existed in the area. Any decisions about the availability of surplus resources have to rely on careful assessment of both intensive uses (e.g. paddy land) and related extensive uses (e.g. watershed protection) of the existing resource base. Unless the allocation of rights and boundaries can be made fairly, it is likely to lead to continuing conflict, uncertainty and resource degradation.
- on the other hand, the rigid allocation of resources to either one or the other of two competing communities may not be necessary. If such allocation cannot be done on a mutually-satisfactory basis, there are clearly local precedents for dispute resolution and joint common property management which do not require such allocation.

Conflict in Water Resource

With the increasing population and demand for food production, there are now greater conflicts over water resources. Two factors affect this: a) expansion of paddy land on the expectation of tapping seasonal water flows; and b) expansion of shifting cultivation in uplands areas, leading to more sharply spiked seasonal runoff patterns (high flow / high erosion followed by rapid and steep decline in flow rates). Both the traditional lowland paddy cultivators, as well as the new paddy farmers in marginal or upland areas blame the practice of shifting cultivation on top of the mountain where water sources originated. In addition to this land use-related conflict, there are further conflicts between paddy farmers at the top end and tail end of local irrigation weir systems, which are no longer able to meet water demands as paddy cultivation expands, particularly during the crucial water-intensive transplanting period.

Role of Local authority in natural resource management: potentials and limitations

Village level

Village committee is the lowest administrative unit in the government line. The committee and village leader are elected by voting within the village. Village level resource management is grassroot-based and involves direct resource users; it can take advantage of traditional management systems when all local participants understand these. However, the village has very limited authority to deal with inter-village disputes, with outside resource claimants such as loggers, and in some cases even with disputes internal to the community. In some cases, conflicts arise due to diversity of interests within individual communities, who seek higher (District) arbitration. According to present resource management policies, the involvement of local community in management decisions is a government priority. However, the participatory process for resource demarcation and management is very poorly developed. Village committees do not understand the concepts or implications of current policy, nor do they recognize the powers which they are intended to exercise under this policy. Without adequate tools or initiative, local rights to resources are at risk.

District level

The District is probably the most important level for resource management due to its status as the rung of the professional bureaucracy that is closest to the resource users themselves. Most personnel employed are long-time residents of the area under their jurisdiction. They are trained by provincial and State authorities, and expected to ensure the implementation of national policies in accordance with the local situation. However, they are typically not trained in participatory methods, in data collection, or in understanding the complexities of resource use relationships between different groups at the local level. District level limitations include shortage of relevant personnel, a high turnover in some districts, lack of experience and appropriate training and above all inadequate resourcing. As a result, the potential of the District to serve as the crucial level of government in facilitating the implementation of government policy is limited.

Although, the district official's roles are significant to supervise and provide consultation to village authorities and villagers. Practically, district officials, in agriculture and forestry sector,

have to deal with many tasks include extension service for livestock production, shifting cultivation, forest conservation, forest logging, land allocation, irrigation. In some districts, forest officials have been trained and served as veterinarian for vaccination. To these tasks, it also limit their capability to concentrate on their major tasks and the organization of work need to be restructured for better works and results.

Proper tools for natural resource management at local level are not well adapted and developed. Most of the district staff who are working in DAFO graduated from different technical schools such as forestry, irrigation, agriculture. Some graduated from abroad (a former socialist countries). In spite of technical routines, most of their works are dealing with a day by day task. Priority and plan had been prepared, but most of the plan are delayed by and constraints to financial allocation from central and provincial level (e.g., lack of transportation, *per diem* for field work etc.).

With the support and co-working with the project team, through the procedure of leaning by doing, it gave a clear results that local staff need to be strengthened after their training in school and experienced in actual situations. Tools like PRA, 3D map and other visual materials are necessary for them in order to discuss, supervise and support the management as well as to do the resource assessment and monitoring as a key activity. Insofar, at district level, there is no information related to natural resources existed and available. What the district has is always a baseline demographic and production data. Though the district staff often visit villagers, but most of the works carried out with village headman, there is no field observation records from time to time.

Key points for district officials should be strengthened and improved are the clear mandate for technical supervision as well as the authority to support their confidence in decision making for local problem resolution. As present their roles are significant, but due to the present situation their role just only a postman/woman to deliver document and policy to village level. Budget allocation is another key problem that the district staff are facing with that resulted to the consequence delayed and canceled some of the field work activities with local communities.

Due to the lack of database at the district level, the crucial government agencies to link between resource management supervision (Provincial/District) and resource management implementation (village), basic format of database for natural resource management is considerably necessary to be established and used by both district and village level. This database will then be able to access and use for resource management and planning purposes as well as for the monitoring and accounting.

Concerning to the task and mandate of district official, proper tools and methods to work with local communities are necessary to be developed and applied based on the location and situation of the areas that constraints with transpiration, communication, education, budget and human resource. Apart from government support, it seems that the supports from other organizations which have direct tasks in this field are required.

Conflict resolution

Village and community level

Generally, the capacity of the village authority and committees in Laos for resolving conflict is reckoned to be great (Kirk, 1996). In some cases, certain conflicts have remained hanging in the balance for many years. Newly-introduced rules are said to be difficult to enforce sometimes due to the reluctance of communities to upset their long-existing relations. There are two different kinds of processes for conflict resolution at the village level. One is to rely on the traditional practice which normally involves deferring to the village committee of elders, who will be consulted and give recommendation for the conflict resolution in particular issues and aspects. Another is to rely on formal public administration channels, so that any conflict that can not be solved in the village, will be sent to the District and will follow the administrative or the justice system, depending on its nature.

Local Authority and Community Involvement

The involvement and participation of local communities are necessary and important to manage the resources. Part of the process is the utilization of the indigenous experience to decide how the resource should be utilized combining with the government policy and regulations to make the resources in the best used and managed.

Project intervention

Revolving fund

As part of the introduction of community resource management process and methodology in the pilot sites described above, a small revolving fund was set up and managed by the District (using external funds) based on locally identified needs and on a revolving credit basis. A buffalo bank has been established and provided to Longkone in Xieng Khouang province, using these funds. Other investments were undertaken on a similar communal basis in Namphao and Namon with different form of revolving funds. Based on our initial evaluation in Longkone, the revolving fund has allowed for an end to further forest clearance and has significantly enhanced food security for the village by enabling an expansion of cultivated paddy. This intervention was the catalyst for a participatory land use planning exercise which given the small size of the community and strong leadership, has achieved a strong consensus on areas to be maintained under forest for various purposes as well as area set aside for agricultural land in this particular case. The small credit provided a strong incentive for local villagers to commit their time and efforts to the resource planning and management exercise.

Tools and methods

Maps and 3 Dimensional Maps

Among the tools which proved to be most useful in the field, working with District officials and village leaders, were 3-dimensional maps. These can be prepared together with local communities, a process which itself provides opportunities for data collection and discussion of contentious issues. The process of constructing and labeling the map, and then of using it in village discussions, helps the villagers to identify and then make decisions on the appropriate boundaries and land uses for different land areas under their jurisdiction, and clarifies conflicts.

Although the formal tenure system is not fully realized and implemented, this tool can guide local people in defining their farming areas, forest for conservation, protection and production, area to be reserved for communities uses in the future.

Exchange Visits and Study Tour

Exchange visits allowed farmers to have a chance to exchange experiences and ideas with people whom they would never otherwise meet. Local exchanges are logistically easiest, of course. But we also found that even taking ordinary farmers on a study tour to another nearby country where the living condition and trends in development are similar (northern Thailand) has benefit and strengthened the confidence of farmers and local staff in their own knowledge and resource management practice. This practice is obviously constrained by the availability of special funds and resources.

Lessons Learned

Presently, the officials in charge of resource management at the district level have little experience and skill to transfer knowledge on resource management especially to involve the local people in the process. Part of the experience in Nam Ngum Watershed demonstrated that training on resource management to these officials to guide them in the process of resource management and utilization followed by the field implementation will result in the great benefits. However, the process is time-consuming and needs continued and followed-up actions as well as personnel who have time to focus on this task. With too few local officials, and resource conflicts spreading, there is not enough staff to follow-up adequately once a participatory local process has been started.

It is also important to train local village leaders. Even though they may lack formal education, these leaders can appreciate the potential for improving long-term resource sustainability and greater livelihood security. Training them in both theory and practical tools for resource management is a good way to improve the quality of common property resources by improving the understanding of management, conservation and development options among users.

The involvement of local staff (villagers) in the implementation of the project, through discussion, training, data collection, workshops and study tour, create more confidence among local people in official recognition of their role in decision making over resource management in their village territory. This influence allowed villagers to assert the joint management of forest between Na Mone and Houai Nhang, where the two villages prefer to share the forest, land and water resources. This case also reflects on land allocation and zonation policy, wherein the community itself has rights to decide how local resources should be managed and conserved as well as to protect from outside claimants.

Through the implementation of the project, at district level, awareness of the complexities of community level management was built up by compiling baseline information, presented through maps and tables as a tool for resources monitoring during training courses for district staff. The district also developed awareness of time consuming nature of work with communities, and the need for staff experience and proper organizational structuring. Districts gave different levels of

attention to such lessons, and Long Xane District was one of those in which less importance was attached to community consultation.

Conclusion

The practice of resource demarcation and local land use zoning which has been undertaken under the new natural resource policies, mainly reflects the limited capabilities of institutions and personnel. However, its success depends very much on the skills of key district staff. Frequent administrative reorganizations and re-assignments have been a key problem in maintaining continuity and follow-up in the new community-based resource planning processes.

Experience from pilot projects in the Nam Ngum watershed suggests the following productive approaches to introducing changes in this field:

- Providing short training course and study tour followed by field implementation are of high practical value to local staff.
- Involvement of local people in resource intervention and resource demarcation is necessary and this has been supported by the present government policy. Resource management and demarcation initiatives were anticipated to help ease conflict and degradation of forest, land and water resources in the catchments.
- The level of awareness of community responsibility for resource stewardship has increased substantially, and there is a sense among village leaders of accountability for conditions of forests and other common property within village boundaries.
- Boundary demarcation can be an inadequate tool for resolving resource rights conflicts and the complexities of existing resource use and management practices (e.g. the case of Namon and Houai Nhang).
- Local commitment and participation in new resource planning processes will require commitment of external resources to livelihood development and improvement. The intervention would start with the small scale that fits local conditions. However, the large-scale intervention is necessary in order to provide sufficient conditions for creating more sustainable land use practices within a participatory resource planning framework.

For overall observation, common property management at the community level needs shared understanding, participatory and common consensus in methods, rules and utilization. Community awareness, rules and consensus are the most important to manage, conserve and develop natural resources in a sustainable manner. Indigenous knowledge can be used as the basis for developing appropriate local resource management plans. But the role of local government officials, who hold external authority and can sanction inappropriate behaviour, is crucial in facilitating this community action.

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