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Land and Forest Allocation in Lao People's Democratic Republic: Comparison of Case Studies from Community-Based Natural Resource Management Research

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This article reviews a landmark policy on resource management in Lao People's Democratic Republic (PDR). The Land and Forest Allocation Policy was introduced in the early 1990s as a means of legitimately recognizing the customary rights of local communities to use and manage land and forest resources. We examine the policy from the viewpoint of decentralized resource management and, through three case studies conducted by the National University of Laos, how it works in practice. The studies were conducted in Vientiane, central Lao PDR, and indicate gaps between the expected goals of land reform and actual practice. The study also shows the varying impacts of the allocation policy on local resource use and household livelihoods in different villages. Finally, the case studies suggest the importance of field-based research as a way of critically reviewing the impact of government policy on local resource management and people's livelihoods.

Keywords customary resource use practice, decentralized forest management, land and forest allocation, resource tenure

Lao People's Democratic Republic (PDR) retains the highest proportion of forest and woodland, comprising both deciduous and evergreen forest, in mainland Southeast Asia, yet forest cover declined from 49% of total land area in 1982 to 47% in 1989 (Manivong and Sandewall 1992) (Table 1). The most recent government figure indicates that forest area declined to 41% in 2002 (Prime Minister's Office 2005). While conditions of declining forest differ across Lao PDR, shifting cultivation and logging are blamed as the main causes of forest degradation in the country (Domoto 1997; Tsechalicha and Gilmour 2000). To combat the rapid loss of forest cover, Lao PDR began a program reform in natural resource management in the early 1990s. Initially known as *baeng din baeng paa*, which literally means to divide and distinguish forest

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Table 1. Changes in forest land in Lao People's Democratic Republic, 1982–1989

	1982		1989	
Category	Area (ha)	%	Area (ha)	%
Current forest	11,636	49	11,167	47
Potential forest	8,553	36	8,947	38
Other wooded areas	1,544	7	1,443	6
Permanent agricultural land	708	3	849	4
Other nonforest land	1,234	5	1,269	5
Total	23,675	100	23,675	100

Note. Based on Manivong and Sandewall (1992).

and other lands, it is now officially known as the *mop din mop paa* or Land and Forest Allocation (LFA) policy.

Development of LFA was supported by various international organizations throughout the 1990s as means of supporting sustainable community resource management and preventing open-access problems by defining clear resource boundaries and constructing resource management institutions based on local participation and customary practices. An underlying assumption is that clear and secure property rights brought about through LFA will help improve productive use of land in rural areas. Meanwhile, the government authorities perceived that LFA would halt environmental degradation by controlling the expansion of shifting cultivation, particularly in the upland areas. LFA involves a series of processes: (1) delineating village boundaries and distinguishing resource boundaries within the village, including forest, agricultural, and other land; (2) prescribing how different lands should be accessed, used, and managed; (3) transferring resource management responsibilities to a village committee consisting of members of the village administrative organization including village leaders and members of mass organizations; and (4) allocating agricultural land and degraded forestland to individuals and households by issuing temporary land use certificates (TLUCs).

In contrast to the stated goals, there is growing evidence of unexpected social and environmental problems arising from the implementation of LFA policies. In this article we discuss differential impacts of the LFA policies in three regions in central Lao PDR based on case studies conducted by researchers from the National University of Laos (NUOL) that participated in a research capacity building project funded by the International Development Research Centre (IDRC) of Canada during November 1999 and December 2002. The current authors were involved as local advisors in the project and participated in group research activities (Vandergeest et al. 2003). The authors also have research experience in two of the selected research sites discussed in the article (Phanvilay 1998; Thongmanivong et al. 2005).

In this article, we argue that while the government aim of LFA is to reduce environmental degradation by controlling expansion of shifting cultivation and improving rural livelihoods by providing secure resource tenure, the results have been mixed and varying due to the social, economic, and historical background and the ways in which the policy was implemented. We also argue that although the basic premises of LFA support decentralized resource management, the

application of LFA also redefines local resources in terms that are "legible" to the central authority by categorizing forests according to the Forest Law and prescribes the way resources should be managed. In the following sections, we first review the background of LFA, and then discuss its impact on boundary delineation, agricultural practices, and resource tenure in the three research sites. We also argue that interdisciplinary field research introduced by our project has been particularly useful to facilitate an iterative learning process for teachers who had limited experiences and understanding of the implication of government policy on local resource use and management practices. The iterative learning process helped teachers to better understand the existing gaps between theory and practice on community-based resource management in Lao PDR.

Land and Forest Allocation Policy

Forestry resources have been an essential part of the national economy in Lao PDR since the late 1970s. Timber and wood exports accounted for 34% of national exports in 1998 (World Bank 2001). Forests and forest resources are also an important part of rural livelihoods, which are essentially subsistence based, as 83% of the total population of over 5 million live in rural areas (UNDP 2001). According to recent studies, nontimber forest products also play an important role in rural livelihoods, typically accounting for 40% to 60% of annual rural household income (Duangsavanh et al. 2002) and providing a source of food (Clendon 2001; Kranh 2003).

Since 1986, Lao PDR has undergone a rapid economic transformation toward a market economy. Providing secure resource tenure and property rights particularly became an important issue in the early 1990s as a way to promote investment and efficient use of land (Gaston 1995). At the same time, growing global environmental concerns prompted the government to consider a more sustainable development path. It was during this time as well that decentralization and community-based natural resource management (CBNRM) became increasingly important in Lao PDR (Hirsch et al. 1996), as different donors and organizations supported institutional development on natural resource management, and the government began to formally recognize customary rights to access and use natural resources.

LFA began in the early 1990s and was proclaimed the national policy in 1996 (see Eggertz 1996). One of the first government actions was to draw exclusive village boundaries throughout the country. The government also recognized the customary resource use practices of local people, as well as collective and private rights to resource use. This is one reason LFA is credited with having one of the most progressive resource management policies in Southeast Asia (Poffenberger 1999). For example, LFA recognizes community land and places it under the management of the village organization, which is the smallest administrative unit in Lao PDR, consisting of village administrative and political leaders. Concurrently, LFA recognizes private rights to use agricultural land and degraded forest through the issuance of TLUCs, which are issued by the District Agriculture and Forestry Office (DAFO).[1]

While decentralized decision-making processes are a key component of the LFA policy, the transfer of power from the central government to lower authorities in the political hierarchy (Dupar et al. 2002, 3) is not a straightforward process. As Agrawal and Ribot (2000) point out, decentralization efforts need to be analyzed in terms of actors, accountability, and power—power to create and modify rules, power to make decisions on how a particular resource or opportunity is used, power

to implement a new set of rules, and power to resolve disputes. They also argue that, for successful decentralization, local government must be enabled to make and enforce decisions and rules. Furthermore, representation and accountability are particularly important in order to safeguard meaningful transfer of power that will serve the local needs. At the same time, the empowered local actors also must be responsive to local people's needs with efficiency and fairness.

Since 1996, the government of Lao PDR has been reallocating financial resources to local authorities to encourage sustainable forest management (Pravongviengkham 2000). LFA is one such effort by the government to decentralize financial resources and executive responsibility to manage natural resources through local authorities. The Provincial Agriculture and Forestry Office (PAFO) oversees the strategic direction of LFA, while DAFO implements LFA together with other members of local authorities, including the District Land Office (DLO), and members of the village administrative organisation.

LFA in Lao PDR allows village organizations to draw up a resource management plan together with local authorities. A village management plan is then submitted to the district authority, the District Chief's Office, for formal approval. After approval, the village organization is held accountable for sustainably managing resources in accordance with the agreement signed during LFA. From a decentralization perspective, this illustrates devolution of management responsibilities to villages, while power to make decision rests with the district authority.

Between the inception of the nationwide campaign between the early 1990s and 2003, more than 5,000 villages are announced to have completed LFA in Lao PDR (Soulivanh et al. 2004). However, official records on the total numbers of villages are questionable, and do not signify that all villages have completed the entire eight-step process outlined in the Ministerial Instruction MAF no. 0822 (Lao Consulting Group 2002), which includes follow-up activities such as extension and monitoring (Table 2).

The number of villages completing LFA is announced occasionally through the media, either on radio, television, or in the newspapers (e.g., *Vientiane Times* 2001). Media announcements often proclaim LFA's impact on controlling shifting cultivation. Rarely do media reports focus on the challenging aspects of LFA, despite the claims made by different studies about the adverse impacts of LFA on local livelihoods and resource use. For instance, a participatory poverty assessment (PPA)

Table 2. The Land and Forest Allocation (LFA) process

Steps	LFA activities
1	Basic preparation (District Agriculture and Forestry Office)
2	Village consultation
3	Village data collection: forest survey, household land use survey
4	Village meeting
5	Land survey
6	Land use planning
7	Extension
8	Follow-up: monitoring and evaluation

Note. Based on MAF (1996).

study conducted in 43 districts across the country by the State Planning Committee (2000) warned of the implications of LFA on rural poverty. Because the LFA reduces household access to upland swidden and fallow lands, which are usually secondary forest, villages that are dependent on swidden cultivation and use of forest resources, particularly in foraging for wild foods, are adversely affected (see also Raintree 2001; Ducourtieux et al. 2005). The PPA also found that newly settled or relocated villages with limited access to resources likewise suffered from LFA because of restrictions on access to forest resources (see also Vandergeest 2003; Moizo 2004). It also pointed out that declining access to land without viable alternatives was one of the driving factors that resulted in the displacement of the rural population (State Planning Committee 2000, 8). Another concern over LFA is that it tends to induce out-migration of villagers. Vandergeest (2003) claims that LFA compromises the ability of rural farmers to produce food by displacing them and regulating their access to forests.

Many studies also point out that the limited budgets and technical skills of local government agencies led to rapid implementation of LFA without adequate consideration of customary resource use practices (Jones 2000; Rock 2003). Resource classification and the development of management plans (steps 1 through 6, Table 2) are often conducted in less than 2 weeks. At the same time, there is a problem in the overall design of LFA as it emphasizes reclassifying forest areas based on the Forest Law, which then leads to fixing territorial boundaries and prescribing the way forests are managed and used regardless of the dynamic resource use practices of the local people. One of the critical problems resulting from such reclassification is that it often limits householders' access to swidden and fallow land to three or four plots. This results in shortening of the fallow period from the traditional fallow period, which extends 7 to 15 years.

Roder (1997) claims that restricted access to swidden fields in the upland community of northern Lao PDR is shortening the fallow period, which then decreases agricultural productivity and increases household labor input for weeding. Research conducted by de Rouw et al. (2003) on swidden cultivation in northern Lao PDR also indicates that conventional shifting cultivation with a short fallow cycle results in low rice production as well as soil erosion, thereby worsening rural farmers' basis of subsistence livelihood. A recent study by Lestrelin et al. (2005) also points out the extent to which government policies such as relocation of upland population and restrictions on the expansion of shifting cultivation induced land use intensification in the upland land areas and aggravated soil erosions.

LFA in Central Lao PDR: Three Case Studies

Between November 1999 and December 2002, IDRC supported the NUOL in developing the research capacity of its teachers to conduct field-based research focusing on key issues of CBNRM. Eleven teachers from four faculties were formed into three interdisciplinary research groups, each selecting a research site in central Lao PDR (NUOL 2002). Prior to the site selection, research teams studied the conceptual framework of CBNRM and visited areas in Vientiane provinces where they learned about local villagers' experiences with resource use and management. Research teams then selected their sites focusing on issues of changing resource tenure. One limitation in site selection was proximity from the university, so that teachers could travel to their sites easily. However, the project encouraged research teams to select

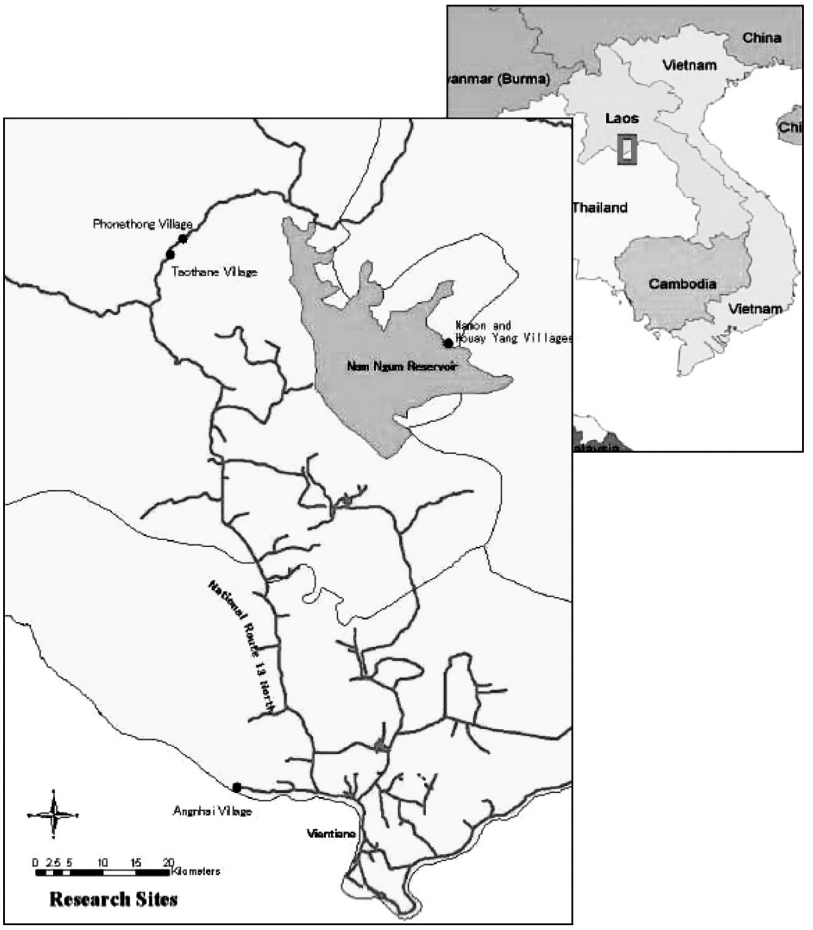

Figure 1. Map of research sites in Lao People's Democrtic Republic. Source: Compiled by authors with the support of the GIS Unit of the Faculty of Forestry.

research sites that reflected different land use practices and ethnic diversity. The aim of the current study is not to generalize the experience of LFA in the three case study sites, but to highlight the differences.

The villages of Namon and Houay Yang are situated by the Nam Ngum Reservoir. Namon village is composed predominantly of the Tai-Kadai ethnolinguistic group that was relocated during the 1970s as the result of hydropower dam construction. Houay Yang village is a Hmong village that consists of people who were relocated in the 1980s from upland areas in the northeastern part of Vientiane province. Phonethong and Taothane villages, located along the National Route 13 North, represent the Tai-Kadai ethnolinguistic group and the Khmu ethnic minority group that migrated from northern Laos due to the civil war during the 1970s. Lastly, Ang Nhai village, located in western Vientiane, represents a relatively well-established lowland village of Tai-Kadai ethnolinguistic group (Figure 1).

All three investigations examined resource use history or the changing relationship of people and natural resources in rural villages of central Lao PDR.

The impact of LFA was considered a key factor that recently affected how people accessed and used resources. In order to understand the resource use history, all research teams conducted semistructured interviews and focus-group interviews at the start of their fieldwork. Furthermore, different types of maps, including topographic, three-dimensional, and land-use maps, and aerial photographs were used during the interviews to facilitate discussions on people's spatial relationship with resources. The research groups also conducted selected household interviews and focus-group interviews to understand the resource use practices of different groups of households within a village.

In this section, we discuss the impact of LFA in each research site based on findings from the three investigations. Three major impacts of LFA are discernible on village and household resource use. First is the construction of new boundaries through LFA. We learned that LFA defines village and resource boundaries, incorporating villages into national administration and making resource access exclusive. Second, LFA affects agricultural practices and forest management. In particular, we learned that new boundaries and rules affect shifting cultivation practice and collective management of the forest. Lastly, LFA affects resource tenure on both collective and private properties. The three case studies not only highlight the limitation of the current LFA to incorporate customary practices and facilitate the collective management of natural resources, but also show its limited impact on providing equitable access to land within a village.

Historic Context

The oldest village, Ang Nhai, was established almost 200 years ago and villagers are mainly of Tai-Kadai ethnolinguistic origin, having migrated from present-day Xayabouly province in northwestern Lao PDR. War and political change have significantly affected the village demography in the last four decades (Chanthasen et al. 2002; Thongmanivong et al. 2005). It experienced an influx of upland minority groups, particularly during the second Indochina war between 1960 and 1975, and an outflow of population to Thailand after the change of political regime in 1975. Since the mid-1980s, villagers that migrated to Thailand in the postwar period have been returning to Ang Nhai (Thongmanivong et al. 2005).

Taothane village is predominantly of Khmu (Mon-Khmer ethnolinguistic group), and Phonethong village is predominantly of Tai (Tai-Kadai ethnolinguisitic group) ethnic origin. Taothane was established in 1970 and Phonethong in 1979 by people from present-day Xiengkhouang and Houaphan provinces in northeastern Lao PDR who sought refuge from the calamities of war (Boulapha et al. 2002).

Lastly, the ethnically Lao (Tai-Kadai ethnolinguistic group) village of Namon was reestablished in its current location after the original village, Nasangha village, was inundated by the reservoir for the Nam Ngum Hydropower Dam after its construction (Hirsch et al. 1994; Phanvilay 1998). Houay Yang is located adjacent to Namon and is a Hmong (Hmong-Mien ethnolinguistic group) village established during the 1980s by villagers from Phou Houat, a province in northeastern Vientiane (Hirsch et al. 1994; Phanvilay 1998; Namsena et al. 2002).

As Table 3 indicates, LFA was implemented in the three research sites between 1996 and 2001. In Namon, Houay Yang, Taothane, and Phonethong, LFA was implemented between 1996 and 1997. In Ang Nhai, while village boundary delineation began in 1993, LFA was not completed until 2001.

Table 3. Study research sites in Lao People's Democratic Republic, 2001

Village	Ethnicity	Households (number)	Population	Village establishment	LFA[a]
Namon	Lao	61	n.a.	1975	1996
Houay Yang	Hmong	55	n.a.	1986	1996
Taothane	Khmu	81	529	1970	1997
Phonthong	Tai	33	55	n.a.	1997
Ang Nhai	Tai	130	617	>200 years	2001

Note. Based on Phanvilay (1998), Boulapha et al. (2002), Chanthasen et al. (2002), and Namsena et al. (2002).

[a] Year of Land and Forest allocation process completion.

All three investigations illustrate the dynamic movement of population caused by war during between 1960 and 1980. However, population movement continues to be dynamic in Taothane, Phonethong, Namon, and Houay Yang. In particular, during 2001 and 2002 more than 20 villagers migrated from Taothane, Phonethong, and Namon (Boulapha et al. 2002; Namsena et al. 2002) and 3 villagers from Houay Yang. This accounts for 3% of the population in Taothane, approximately 6% in Namon, and 1% in Houay Yang. Studies in the two research sites suggest that the main reasons for migration were lack of economic opportunities (e.g., lack of access to sell nonforest timber products [NTFPs], wage labor, etc.) as well as lack of access to productive agricultural land in the village.

Construction of Boundaries

In the three research sites, LFA had a significant impact on village and resource boundaries. The notion of boundaries was introduced by LFA and was not only conceptually new, but also affected the relationship of people and resources between villages as well as within a village. In this section, we first discuss how LFA affected inter-village resource access and use and then how LFA affected household access to resources.

By defining the village boundary, LFA incorporated villages into the national administrative system. In the case of Ang Nhai, LFA reinforced the boundary between the state forest and the village, as large tracts of forest were incorporated into the newly established national reserve forest, Phou Phanang. LFA also defined the territorial boundary for which the village organization was responsible.

Prior to LFA, village boundaries were recognized among the neighboring villages using natural landmarks such as forests, streams, and trees. None of the villages studied in the three sites had written rules regarding the management of forest or common resources prior to LFA. Customarily, the resource boundary was inclusive: It allowed neighboring villages to access natural resources. For example, villagers were allowed to access the forest for food collection, as well as clearing for cultivation with limited restrictions. In Taothane and Phonethong, villagers used to share the forest as they collected non-timber forest products and cleared forest land for cultivation. However, after LFA, resource use in each village was territorially defined. LFA also brought new rules to use and manage resources: Villagers from Phonethong were no longer allowed to access forest that was allocated

to Taothane village without paying user fees or asking permission from the village organization, and vice versa.

LFA also affected resource access within the village, as it defined village forests and land according to categories stipulated in the Forest Law.[2] More than 80% of the land areas in Taothane and Phonethong was defined as forestland, which prohibited conversion to non-forestland (Boulapha et al. 2002). This resulted in a significant impact on households that depended on shifting cultivation because they were forced to rotate crops using a 3- to 4-year cycle instead of what used to be a 7- to 9-year cycle. Thus, households that depended on swidden cultivation were faced with problems of increased weed infestation and lower rice yields. We discuss LFA's impact on swidden further in the following subsection.

Agricultural Land Use

As described earlier, when LFA was implemented in the three research sites, it defined village boundaries and established a new set of rules to manage forestland and forest products. High priority was placed on forest protection and conservation by delineating areas of forest where human access was regulated. This included restricted access to both timber and nontimber forest products and the prohibition of swidden cultivation on forestland.

The effect of the institution of formalized forest management in the three research sites is mixed. For instance, Boulapha et al. (2002) indicate that after LFA, swidden fields declined by 90% in Taothane and 60% in Phonethong. At the same time, the area of secondary forest grew by 14% around Taothane and over 100% around Phonethong. This signifies that LFA contributed to controlling shifting cultivation and increased forest cover in the forests of the two villages. Meanwhile, studies by Chanthasen et al. (2002) and Thongmanivong et al. (2005) indicate that the decline of swidden in Ang Nhai was not so much due to LFA as to other factors, such as increased development of lowland agriculture and cash crop production. According to Chanthasen et al. (2002), areas of paddy field increased between 1981 and 1998 from 28 to 67 ha, while swidden field decreased from 71 to 41 ha. Permanent agricultural land also increased from 22 to 105 ha between 1981 and 1998 (Chanthasen et al. 2002).

The effect of LFA on shifting cultivation and forest degradation is less clear in the case of Namon and Houay Yang. Namsena et al. (2002) observe that Houay Yang villagers who used to conduct shifting cultivation in the highland areas began to purchase lowland agricultural land, namely, paddy fields, from the lowland Namon villagers. The transition occurred as some villagers in Namon began to invest in fisheries. Meanwhile, Houay Yang villagers began to intensify the use of upland fields. At the same time, those farmers who did not have access to capital resources began to migrate from the village in search of productive agricultural land and opportunities for nonagricultural labor.

In the past, access to swidden was based on mutual agreement, usually among families. Access to swidden was regulated only by the individual ability to mobilize labor and capital. Swidden, by nature, is a temporary conversion of forest into nonforestland. LFA imposed new restrictions on households' access to swidden fields regardless of past practices. It also restricted the length of the swidden cycle by allocating a maximum of four plots per household. This meant that households that conducted swidden on cycles of more than 4 years needed to adopt new cultivation

practices to compensate for soil fertility and to counter weeding problems. For example, some farmers in Houay Yang developed terraced rice fields in the upland area.

Property Rights and Livelihood

Another question about LFA's impact is, how did LFA affect private and collective rights to resources? In all three villages, we observed that relatively wealthy households were able to acquire more land during LFA. However, LFA is not the only factor that affects how land is distributed within a village. Early settlers tend to have better access to land, as we have seen in Taothane, Phonethong, Namon, and Houay Yang. Namsena et al. (2002) point out that early settlers also have better access to fertile land with access to water, which is a crucial factor for paddy rice cultivation. Their land holdings tend to be larger than those of families that resettled more recently. The three case studies suggest that LFA allowed early settlers and those villagers with capital and power to secure their land rights and invest in land development.

On the other hand, LFA disadvantaged recent settlers with limited capital resources who depended on shifting cultivation. Who are the people affected? In the three case studies, those who are dependent on shifting cultivation include young households that have just separated from their parents, new migrants, or those households that have been socially marginalized within a village. What is common among these groups of people is that they have limited labor force and capital resources available within their families. Although LFA reallocates lands to these households, they are often granted lands that require additional capital and labor input. Those that cannot spare any capital or labor input have no choice but to seek alternatives to support their day-to-day livelihoods. This includes wage labor, share-cropping, or moving out of the village.

Another question about LFA's impact on resource tenure is whether LFA strengthens collective rights to use and manage resources. While LFA recognizes the customary resource use practices of the villages, there are cases, such as at Ang Nhai, where the resource boundary is delineated without recognition of the customary village boundary and resource use practices. In the case of Ang Nhai, vast areas of forest were incorporated into the national forest reserve for biodiversity conservation. LFA reinforced this new forest boundary and defined the village organization's responsibility to a new village territory. However, it also made the village organization indifferent to rampant logging and resource extraction occurring in the state conservation forest, as villagers were officially cut off from their customary territory.

Meanwhile, in Taothane and Phonethong, LFA strengthened the village organizations' ability to regulate outsiders' access to resources through the demarcation of boundaries and the development of new management rules. Although these new institutions justified each village's claim to resources and restricted nonvillagers' access to them, they also led to a new series of intervillage conflict as villagers continued to access resources regardless of the formal village boundary.

Conclusions

In this article, we examined the differences between the theoretical goals of LFA and the impacts of its implementation. The review of the three case studies indicates that although LFA's aim had been to improve local resource management by delineating

resource boundaries and recognizing local communities' use rights, rapid zoning and prescription of resource use simplified the complex relationship between the local people and the natural resources. These also emphasized exclusive village resource boundaries, and identified the village as the basic unit of resource management.

From a decentralization perspective, financial resources were transferred from the central government to provincial and to district authorities to implement LFA during the late 1990s. However, the budget for LFA declined after 2000, which discouraged district offices from continuing to implement and monitor LFA. This and the general lack of human resources at the district level often led to implementation of LFA in haste with limited attempts to understand and incorporate local customary resource use and management practices. The lack of financial resources and technical expertise of DAFO also meant that there were few or no extension services to improve the use of resources in these villages after the implementation of LFA; nor were there follow-up activities to ensure that resources were managed according to the agreement.

Another problem is a lack of transparency in administration and decisions over resource management from the provincial government to the district level. There are no systematic montoring system to ensure resource management practices follow agreements. There is also a lack of process to critically review policy and promote innovative approaches to resolve resource problems at the local level. These difficulties are the main cause of the current impasse of resource management.

The three case studies indicate that the effect of LFA is variable due to its geographic location, settlement history, ethnic composition of village, availabiliy of productive resources, and the degree of economic integration of the village. As had been pointed out by an earlier study conducted by the State Planning Committee (2000), households with little or no access to permanent agricultural land in the upland areas are more constrained by LFA because it restricts their access to swidden and fallow lands. However, case studies presented in the current article suggest that villagers are also adopting divergent strategies to supplement the declining swidden rice yields. For instance, upland villagers with capital resources are purchasing agricultural land in the lowlands and transforming their agricultural practices and livelihoods basis. Others with limited capital resources are renting land from other members of the village to produce cash crops or collect commercially valuable forest products in exchange for rice or cash. However, our case studies suggests that households with limited access to land and limited ability to command capital resource and labor must seek alternatives that include migrating out of the village in search of agricultural land and other economic oportunities.

While the three case studies were exploratory and were part of research capacity building, they introduced the importance of conducting research that focuses on the changing relationship of people and natural resources in rural Lao PDR. The project also highlighted the need for a critical review of government policy such as LFA, which was a part of the factors that affected people's relationship with nature.

The most challenging aspect in the research capacity building was that of stepping beyond the routine *kep kam khomun* or "data collection" without questioning the complex social realities, which is a fairly common practice in Laos. The field-based approach particularly exposed teachers to question assumptions of government policies on resource management and development, which was a new exercise for most of them. The field-based research provoked an iterative learning process, as research teams traveled to and from the university and the villages. The process also

thrusted the teachers to critically examine the drivers of socioenvironmental changes and their impact on local resource use. Furthermore, it provoked the need for academic institutions such as the NUOL to collaborate with other national agencies and research institutes to address key issues on natural resource management. Efforts to support field-based academic research on natural resource management in Lao PDR are considered pertinent, as the country is experiencing a period of rapid transformation. As we have seen in the case of LFA, innovative approaches to bridging the gap between theory and practice are essential for improving the current impasse in resource management. This requires substantial efforts to critically review situations faced by local communities as well as documentation of the learning process, and actively exchanging ideas and lessons that had been learned through the process.

Notes

1. The Forest Law categorizes forest into five categories, including protection forest, conservation forest, rehabilitation forest, utilization forest, and degraded forest.
2. In August 2005, DAFO, which is the lowest line agency under the Ministry of Agriculture and Forestry, was renamed as the District Agriculture and Forestry Extension Office and was placed under the supervision of the Provincial Agriculture and Forestry Extension Service Center. We refer to DAFO in this article as it primarily draws on research conducted prior to 2005 with reference to DAFO.

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