森林・農業班　C

北ラオス・ナムハ国立公園における非木材林産物利用

ビラポン アヌロム・竹田 晋也（京都大学大学院アジア・アフリカ地域研究研究科）

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NTFPs Gathering of Khmu community after implementation of land allocation program: a case study from national biodiversity conservation area, northern Lao PDR

VILAYPHONE Anoulom and TAKEDA Shinya
(Graduate School of Asian and African Area Studies, Kyoto University)

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1. Introduction

The importance of NTFPs' role to many communities has been recognized. However, successive appearance of NTFPs depending on the length of fallow periods has not been recognized and studied. This study is to find out the role of NTFPs in Khmu' s swidden cultivation before and after National Biodiversity Conservation Area (NBCA) and Land Allocation Program (LAP).

2. Material and Methods

The study was conducted in a Khmu community of Nam Ha village located inside Nam Ha NBCA of Luang Namtha Province. A preliminary survey of village land use was carried out with special focus on different stages of fallow. Plots (15 x 15 meter) were laid out at two, four, six and eight years fallow respectively. Socio-economic data was collected by semi-structured interview with different target groups. The target groups were classified into four groups. First group is swiddeners with rice sufficiency; second group is swiddeners without rice sufficiency; third group consists of both paddy cultivators and swiddeners with rice sufficiency; and fourth group consists of both paddy cultivators and swiddeners without rice sufficiency.

3. Results and Discussion

Nam Ha village was established during early stage after country revolution (1976). During earlier settlement period, there were only 26 households. The number rapidly increased during 1980s to 48 households and finally to 98 households at present day which make up the population of about 450 people.

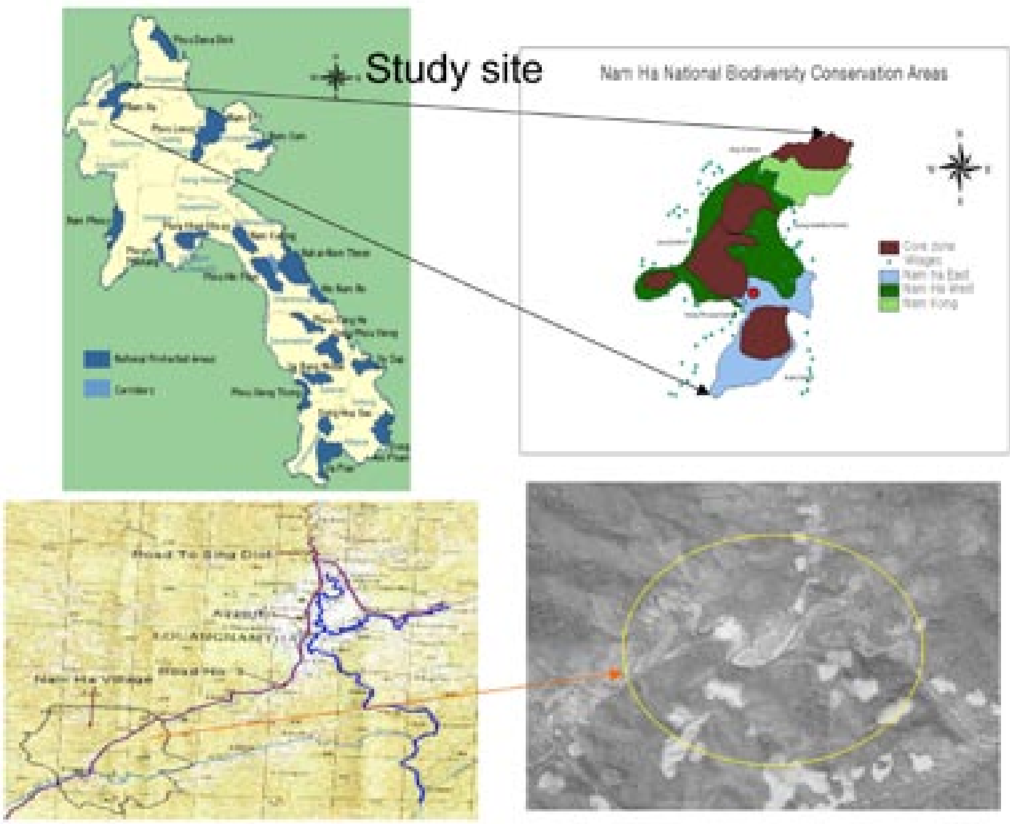
Khmu is animist and has quite clear sexual division of labor. Harvesting, collecting of wild forest food, threshing and milling of the rice are mainly done by women and children. Settlement period, the number of livestocks and the size of cultivation fields are the most important factors to determine rice sufficiency level of households. The significant change of land tenure happened with current policy of LAP. Five forest types, i.e. protection, conservation, rehabilitation, production and degradation forest, are defined under custody of the State. Only degraded forest land is allocated to individual households with an equal three plots for doing "permanent cultivation". The estimated rotation made by LAP to return to same cultivated plot is in between eight to nine years. It means that one plot can be continuously cultivated for two to three years before the land become fallow. Since NBCA and LAP were launched, traditional long fallow of more than ten years had been replaced by a single cultivation, two years fallow and rotation returns.

Wide varieties of NTFPs can be obtained from the first year such as broom grass, rattan. Fallows older than ten years provide orchid leave and sapan's bark before new rotation is turn. The average income from NTFPs per households during 2003 was about 1,472,000 Kip (123USD).

Khmu of Nam Ha village has an interesting traditional way of gathering NTFPs especially for Cardamom. After households have finished farm activities, village’ s chief together with village’ s elder will check and announce for opening session of gathering.

4. Conclusion

Long fallow period has provided and played significant role in generating useful NTFPs which are ecologically and economically valuable for villagers. Shorter fallow period might affect succession chain of NTFPs on different stages of fallow. At present, the impact is not clearly indicated since remaining fallow lands of different ages are still available. However, when those fallow lands become mature forest, food supply and NTFPs might be affected severely.



Nam Ha Land-Use Map

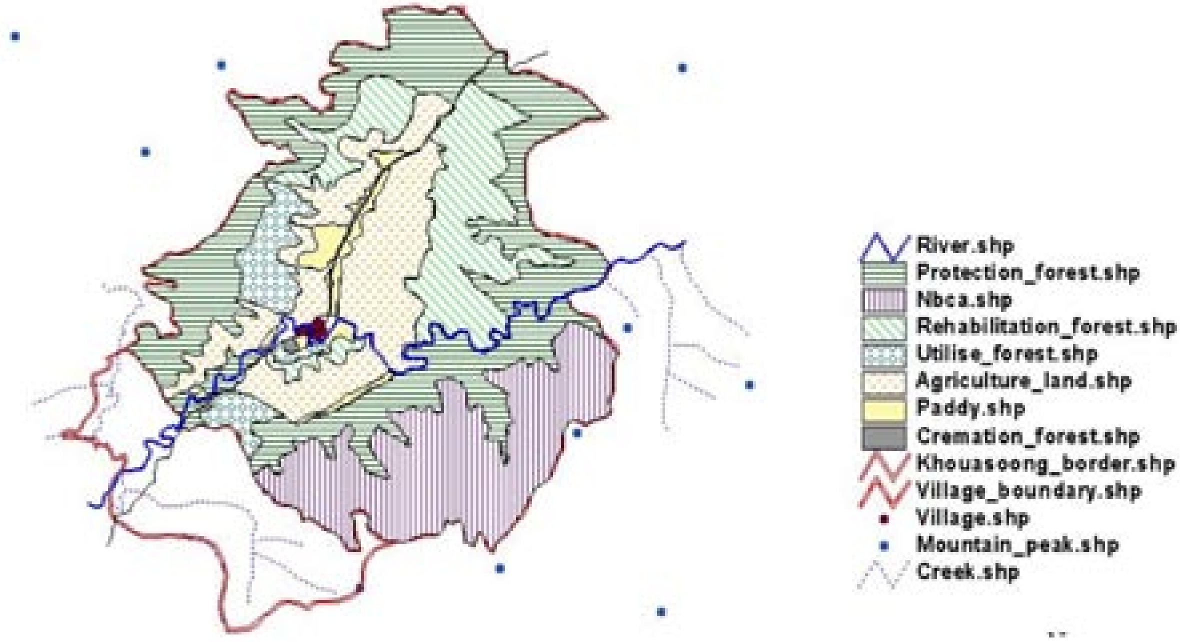
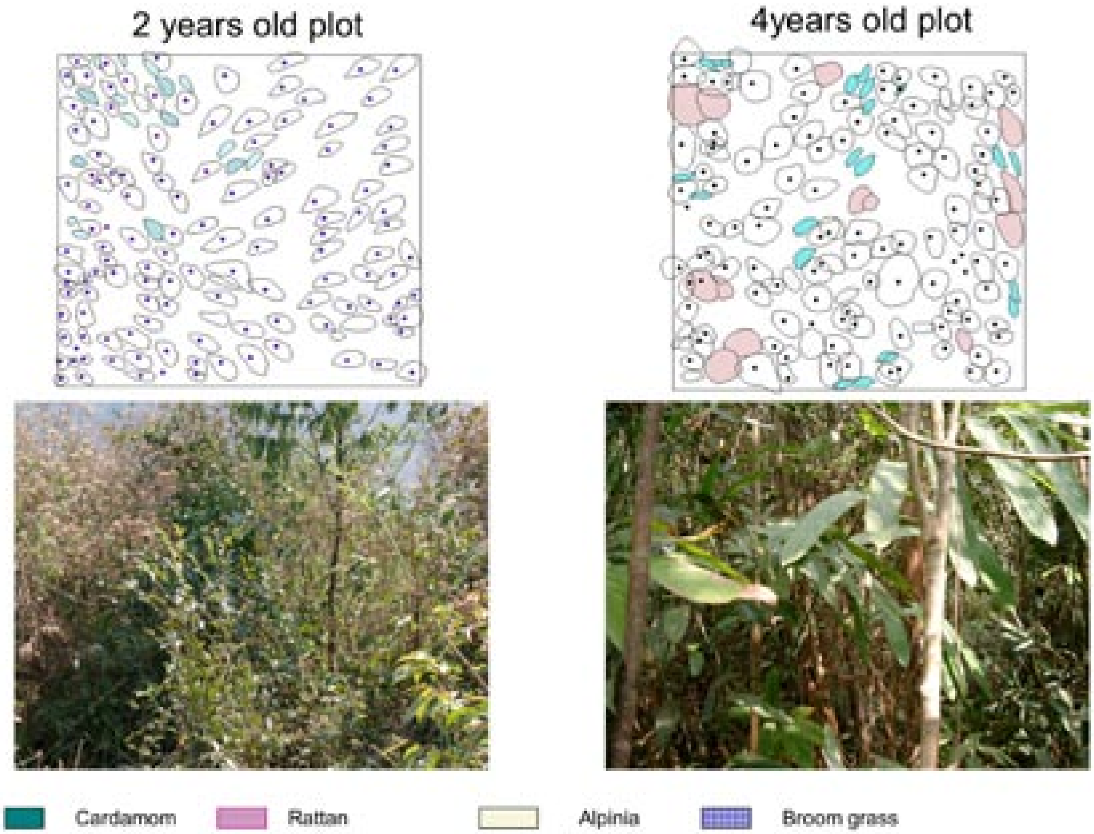


Table 01: Comparison of households' sufficiency status.

HH Interviewed	Settlement Range	Average of HH members	Average of NTFPs collected Kg/HH				Activities			
			C	A	R	O	Paddy field	Upland field Plot/Kg	Home garden	Livestock
Swiddener with rice sufficiency (10n, 100%)	1976-1989	4	5	6	16	0.8	0	3 (60)*	Yes	Pig, goat & buffalo
Swiddener without rice sufficiency (10n, 20%)	1991-1996	6	7	16	19	1	0	3 (30-60)	No	Pig & goat
Paddy & swiddener with rice sufficiency (6n, 100%)	1976-1980	7	9	17	36	1.6	1.5 ha	3 (50-90)	1-2 ha	Pig, goat, cow & buffalo
Paddy&swiddener without rice sufficiency (6n, 19%)	1976-1996	6	14	28	41	1.7	0.7 ha	3 (30-60)	0.5 ha	Pig & goat

Note: (C) is cardamom; (A) is alpinia; (R) is rattan seed; (O) is orchid leave; *amount of sowing seed


2 years old plot
4years old plot
Cardamom
Rattan
Alpinia
Broom grass

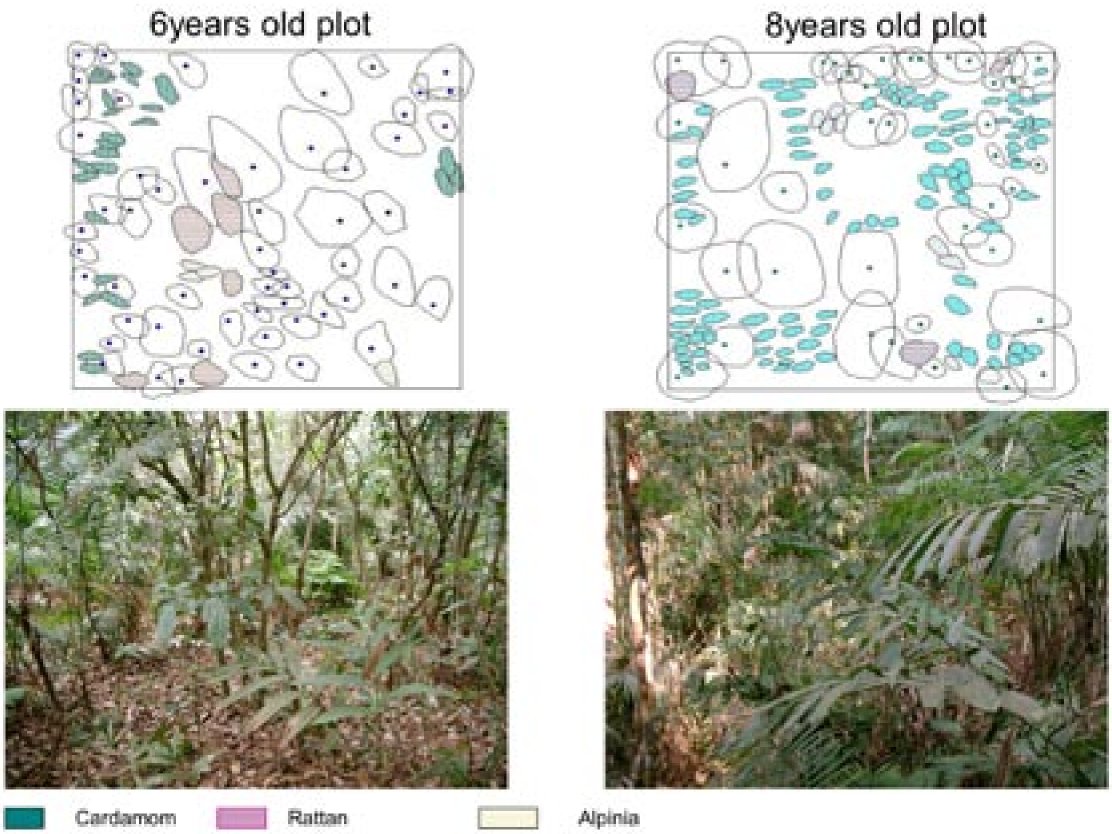

6years old plot
8years old plot
Cardamom
Rattan
Alpinia

Table 02: Result of plot survey.

Fallow Period	Species: Local Name	Species: Scientific Name	Density (ha)	Percentage of total basal area
2 years	Muat	*Aporosa villosa*	978	39
	Ko	*Castanopsis hystrix*	889	44
	Toongkhop	*Macaranga denticulata*	400	12
	Tieu	*Cratoxylon prunifolium*	133	3
	Po	*Tristania burmanica*	89	2
4 years	Ko	*Castanopsis hystrix*	1289	24
	Toongkhop	*Macaranga denticulata*	1022	23
	Pohoo	*Hibiscu macrophyllus*	756	14
	Sikhaypaa	*Litsea cubeba*	444	11
	Kolan	*Xeropermum laoticum*	356	9
	Chuang	*Cinnamomum litseafolium*	222	5
	Khom	*Zizyphus cambodiana*	179	4
	Muat	*Aporosa villosa*	178	3
	Po	*Tristania burmanica*	133	4
	Somphod	*Rhus chinensis*	89	2
	Champi	*Paramichelia baillonii*	44	1

Fallow Period	Species: Local Name	Species: Scientific Name	Density (ha)	Percentage of Total basal area
6 years	Po	*Tristania burmanica*	578	10
	Kom	*Grewia paniculata*	444	60
	Toongkhop	*Macaranga denticulata*	267	7
	Ko	*Castanopsis hystrix*	178	4
	Had	*Artocarpus asperula*	89	1
	Pohoo	*Hibiscu macrophyllus*	89	10
	Somphod	*Rhus chinensis*	89	2
	Nhomhorm	*Toona febrifuga*	89	6
8 years	Muat	*Aporosa villosa*	400	41
	Khom	*Zizyphus cambodiana*	400	39
	Phao	*Engelhardtia spiculata*	356	11
	Ko	*Castanopsis hystrix*	222	5
	Namkieng	*Melanorrhoea laccifera*	89	4

Table 03: Density of NTFPs in different fallow periods (/ha)

Fallow	Cardamom	Alpinia	Rattan
2 years	444	-	-
4 years	933	400	578
6 years	1156	267	178
8 years	4667	311	133

Table 04: NTFPs calendar on different fallow periods

NTFPs		Price (kip/kg)	Collect (kg)	Fallow years	Seasonal calendar											
Name	Scientific name				J	F	M	A	M	J	J	A	S	O	N	D
Rattan shoot	*Calamus spp. & Daemonorop spp.*	20,000	50	1-10												
Broom grass	*Thysanolaena maxima*	2,500	50-80	1-2												
Cardamom	*Amomum villosum A. ovoidium*	10,000-15,000	20-40	>6-8												
Galanga seed	*Alpinia galanga*	3,000	5-10	>6-8												
Rattan seed	*Calamus spp. & Daemonorop spp.*	2,500	50-100	>6												
Sapan	*Helicteras isora*	800-1,000	5-20	>8												
Orchid leave	*Ludisia discolor*	10,000-15,000	0.5-2	>10												
Bitter bamboo	*Indosasa chinensis*	500-1000	NA	?												

(Note: NA is not available)