

# annex 1

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## annex 2

# workshop programme

Xishuangbanna, China – 15 to 18 January			
Date	Time	Activity	Responsible persons
15 Jan		Arrival of participants in Jinghong	Qian Jie
16 Jan	08:00	Travel from Jinghong to Xishuangbanna Tropical Botanical Garden (XTBG)	Qian Jie
	11:00	Introductory tour of XTBG & Museum	Chen Jin
	12:00	<i>Lunch</i>	
	13:00	Registration	Qian Jie
	14:00	Opening of the mobile workshop	Xu Jianchu
	14:15	Introduction of the workshop format and process	Chun Lai
	14:45	Overview of MMSEA and the workshop themes, Spatial overview and thematic linkages Community-based perspectives and issues	David Thomas Xu
	15:30	<i>Tea break</i>	
	16:00	Profile and area perspective for: Yunnan Northern Laos Northern Thailand	Su Yufang Houmchitsavath Sodarak Pornwilai Saipothong
17 Jan	17:00	Introduction to thematic working groups on: Land use change Livelihoods/Markets and Trade Resource governance	Chun
	08:30	Perspectives on transboundary issues in MMSEA	Chen Jin
	09:00	Introduction to working group themes, and putting themes into MMSEA context	Theme coordinators
	09:45	Group discussion in 3 WGs: sharing experiences, knowledge; identification of key issues within groups	Theme coordinators and working groups
	12:00	<i>Lunch</i>	

Xishuangbanna, China – 15 to 18 January (cont'n....)			
Date	Time	Activity	Responsible persons
17 Jan	14:00	Working group report-back and discussion	Working group rapporteurs
	15:30	Briefing on next day's field visit	Xu
	16:00	Information market on work in Yunnan	Qian Jie
18 Jan	08:30	Departure from Xishuangbanna to Mengla Field visits in three groups to: 1) Mengxing State Rubber Farm (Han) 2) Nanyang Village (lowland Dai) 3) Paozhuqing Village (upland Yao)	Xu & Fritz Kahrl Qian Jie & Su Yufang He Jun & Li Zhinan
Northern Laos – 19 to 21 January			
19 Jan	08:30	Travel overland from Mengla to Lao border; Process visas and cross to Boten (Laos)	Visa: Thoumthone, Hounghphet (NUOL) Vehicle: Vilaphong (NAFReC)
	11:30	Travel to Namo district, Oudomxay	Lunch: Namo DAFO
	13:00	Field visits to Namo and Nampheng villages (3 groups per village)	Houmchitsavath Sodarak and Namo DAFO
	16:00	Travel to Oudomxay	Vehicle: Vilaphong Accommodation: Thoumthone
	18:30	<i>Dinner</i>	Dinner: Thoumthone, Hounghphet
20 Jan	07:30	<i>Breakfast</i>	Breakfast: Thoumthone
	08:30	Travel to Pakchiek village, Luang Prabang	Vehicle: Vilaphong
	12:00	<i>Lunch</i>	Lunch: Thoumthone
	13:30	Visit IUARP agroforestry activities (6 groups)	Houmchitsavath and Pak Ou DAFO
	16:00	Travel to Luang Prabang town	Vehicle: Vilaphong Accommodation: Vilaphong, Thoumthone
	18:30	<i>Dinner at Villa Ban Lao</i>	
21 Jan	07:30	<i>Breakfast</i>	
	08:30	Mini-Workshop (at Villa Ban Lao)	
	09:00	Introduction  Opening remarks	Houmchitsavath Prof. Dr. Sayamang (Vice President, NUOL)
	09:30	Presentation on agriculture and development in Luang Prabang	Somphong Pradichit (Director, PAFO Luang Prabang)



Northern Laos – 19 to 21 January (cont'n...)			
Date	Time	Activity	Responsible persons
21 Jan	10:00	Lao case studies: Northern development strategy Land use in northern Lao Sustainable livelihoods in Laos	Dr. Leeber Leebouapao Dr. Sithong Thongmanivong Linkham Douangsavanh
	11:00	<i>Tea/coffee break</i>	
	11:15	Panel and open forum discussion	Moderator: Houmchitsavath
	12:00	<i>Lunch</i>	Lunch: Thoumthone
	13:00	Thematic group discussions: Synthesizing field observations and reflections thus far	Theme coordinators and working groups
	16:00	Information market on relevant work in Laos	Coordinator: Bandith (NAFRI) 1) R3: Phaknakone 2) Trade/markets: Singkham 3) Livelihoods: Kongkeo 4) Resource governance: Thavone 5) IUARP: Vilapong 6) Lao-Swedish project: Somphanh
	19:00	<i>Bacii and banquet at Villa Ban Lao</i>	
Chiang Mai, Thailand – 22 to 27 January			
22 Jan	07:00	<i>Breakfast</i>	Breakfast: Thoumthone
	08:30	Tour of Luang Prabang (optional) Royal Museum, Vat Xiengthong	Vehicle: Vilaphong, Somphanh
	10:00	Depart to airport for flight to Chiang Mai	Thoumthone, Houngphet, Vilaphong
	13:00	Arrival in Chiang Mai Traveling from Chiang Mai City to Doi Inthanon	ICRAF-Chiang Mai
	18:30	<i>Dinner at Navasuang Resort</i>	
	19:30	Overview of land use change in northern Thailand	David T.
23 Jan	08:30	Depart for field visits: Mae Khongkha: sedentarisation of shifting cultivation Mae Suk: opium substitution by highland horticulture Mae Tum: active shifting cultivation  Travelling from Doi Inthanon to Chiang Mai City	David T. Nate Badenoch Pornwilai

Chiang Mai, Thailand – 22 to 27 January (cont'n...)			
Date	Time	Activity	Responsible persons
24 Jan	08:30	Depart for field visits: Lamphun: Longan grower's association Mae Wang: eco-tourism San Sai: high-tech, intensive agricultural production	Pornwilai David T. Attachai Jintrawet
25 Jan	08:30	Discussions within WGs: synthesizing observations and perspectives and formulating research questions	Theme coordinators and working groups
	12:00	Report-back in plenary	Chun
	12:30	<i>Lunch</i>	
	13:30	Presentation of 6 case studies by participants	
	15:30	<i>Coffee break and Thai information market</i>	Darika Huaisai
	16:00	Guidelines for work in country groups to come up with key messages from workshop, follow-up actions and feedback on workshop process	Chun
26 Jan	09:30	Report-back of country groups	Group presenters
	10:30	Wrap-up discussion	Chun
	11:00	<i>Coffee break</i>	
	11:30	Closing ceremony	Workshop organisers
	12:30	<i>Lunch</i>	
	14:00	Post-workshop events on: Plan to finalize case studies for publication Documentation for workshop report	David Melick & Xu Chun & Sardu
	18:00	<i>Farewell dinner</i>	
27 Jan		Departure of the participants	

## annex 3

# composition of thematic working groups

Land Use Change	Local Livelihoods/ Markets & Trade	Resource Governance
Jeff Fox & Horst Weyerhaeuser*	Yayoi Fujita & Su Yufang*	Walt Coward & Xu Jianchu*
Zhang Peifang	David Thomas	Houmchitsavath Sodarak
Andrew Willson	Nou Keo Sothea	Thavone Vongphosy
Laura Ediger	Fritz Kahrl	Phaknakone Rattana
Darika Huaisai	Singkham Bounloutay	Erik Neilson
Liu Wenjun	Badith Ramonkhoun	Thongsavanh Boupna
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John Vogler	Kongkeo Duangdala	Chirawat Vejpas
Chen Huafang	Li Zhinan	Naruemol Kaewjampa
Pornwilai Saipothong	Vu Thi Hien	He Jun
Do Van Nha	Boonserm Cheva-Isarakul	Brett Ballard
Attachai Jintrawet	Benchaphun Ekasingh**	David Melick
Li Haitao**	Houngpheth Chanthavong**	Nick Menzies**
Sianouvong Savathvong**		Nate Badenoch**
		Somphong Pradichit**
		Sardu Bajracharya
		Yuki Miyake
* Theme coordinators		
** Participated in one country only		



# annex 4

## field visits in southern Yunnan

### Field Visit 1: Mengxing State Rubber Farm

Mengxing Rubber Farm

General Manager: Mr Zhu Defu

Total land area: 6666.6 ha

Area of rubber planted: 5800 ha

Area of tapped rubber: 3333.3 ha

Rubber production: 5600 t/year

Yield: 26.7 t/ha

Population: 7049

Staff: 2800

Retired staff: 1500

Processing factories: 3

Cement factory: 80,000 t/year

Hydro plant: 4700 kW

Rubber plantation: long cycle, big investment, great risk

### Time Line

1959: Founded with 120 workers, jointly with 400 workers from Hunan Liling, large primary forest

1960: April, additional 800 workers from Hunan, planted 6.6 ha with seedlings (without graft)

1960-1962: National famine

1963: Formed 20 production units, planted grafted seedlings

1965: Joined by 200 workers from Puer, planted about 200 ha

1969-1971: 2000 youths sent from Beijing, Shanghai, Qiongzong and Kunming to be rubber farmers

1979: Youths returned to city, substitute workers recruited from Mengla and Mojiang

1983: 'Forest fixing', new state forest opened for rubber plantation, permits now needed

1999-2001: Low price, \$726.3 per ton, \$847.4 per ton, \$968.5 per ton

Mengxing Rubber Farm: One rubber plantation, two systems

To ensure the self-sufficiency of rubber, the Chinese government began to establish large-scale rubber plantations in Xishuangbanna in the 1950s through resettled Han Chinese from Central China. The Mengxing Rubber Farm is a state rubber farm established in 1959 with a total land area of 6667 ha.

Of these, 5800 ha are planted with rubber, 3333 ha are tapped rubber with an annual production of 5600 ton of dry rubber at present. The farm has a population of 7049 including 2800 contracted staff and 1500 retired staff. It is adjacent to the Jinghong-Mengla road leading to the Lao border. It is one of 18 rubber plantation bases for the Yunnan Natural Rubber Company (formally called "Yunnan Land Reclamation Bureau").

### Governance History

The Mengla County of Xishuangbanna is the traditional home of upland minority people ('hill tribes') including Dai, Hani (Akha), Yao, Yi, and Miao (Hmong). The Dai have played a long and important role in organising social institutions and in governing natural resources both in the uplands and lowland valleys. During Land Reform (1956-1958) all lands were claimed as state property although traditional access was secured. This made establishment of a state rubber farm feasible. Resettled state farmers (mostly Han Chinese) could have any suitable state forestlands for rubber plantation. All state rubber farms were part of the former Land Reclamation Bureau, which was an independent system from the local government of Xishuangbanna.

### Current Governance Arrangement

The Mengxing rubber farm conducted structural reforms in 2002. In order to make the rubber industry more competitive, the rubber farm was divided into two parallel systems, i.e., the State Farm (non-productive part) and the Rubber Company (productive part). The Rubber Company engages in rubber production (land, rubber trees, processing facility, and contracted staff). The State Farm runs all social services (hospital, school, transportation, and manages retired workers). The Rubber Company, practices a combination of centralised planning and privatised management. All rations of rubber production are allocated from its Kunming-based headquarter. State rubber trees are contracted to each staff or household under the 'Household Responsibility System (HRS)'. Each worker looks after 3.6ha of rubber (about 960 rubber trees/person), located in 4 plots (tapping and collecting one plot each day with 4 days rotation). Plots are allocated according to distance, varieties, and age of rubber. Salary is paid according to completed quota and profits from selling rubber at market prices.

Before 1983, the State Farm could open any state forestland suitable for rubber plantation (so long as it was less than 800 masl, had a gentle slope, good accessibility, sufficient water, and was a residential site). After forest land allocation (Lin Ye San Ding) in 1983, the State Farm had to get permission from the County Forestry Bureau for any new rubber plantation. Often there was no more suitable land for rubber expansion. After the 'Wasteland Auction' policy was implemented in 1993 in Xishuangbanna, the state rubber farm was able to lease land (often swidden-fallow fields) from local communities either from local collectives or households such as the Dai, Yao and Hani (Akha). A total of 1333 ha have been leased and planted with rubber so far (half leased in 1998 and half in 2002). The leases last for 40-50 years (at \$9.07 per ha/year, about \$ 363 per ha over 40 years).

The headquarters appoints all high-level leaders at the Mengxing rubber farm. All management targets have to be approved by headquarters. The General Manager has to execute mandates from headquarters with little discretionary power or rights. Despite this, the relationship between the staff and farm, and between the farm and headquarters has not been defined.

## Strengths and Limitations

- Livelihoods

Income for rubber farmers depends not only on the yield of rubber (which depends on climate and diseases), but also on the market price for rubber. Both factors are out of their control. After privatising the management of rubber, the livelihood strategy for state rubber farmers included: a) intercropping in young plantations, b) diversification in agriculture, livestock and aquaculture; c) selling rubber seedling; d) seasonal labour for off-farm jobs; and e) shared tapping and leasing land from upland farmers.

- Land use/conservation

Individual rubber farmers have few rights to make their own decisions in relation to land use. Monoculture rubber plantation is the predominant landscape in rubber farms and contributes little to biodiversity or agricultural diversity conservation. Rubber plantation has been reported as having a negative impact on the local climate by reducing foggy days and stream flow, and increasing soil erosion.

- Resource rights

All land, facilities and rubber trees are state property. Staff have a right to manage, but don't have any right to cut, lease or even sell rubber milk to others. Staff are contracted to manage rubber forests according to quotas set by headquarters in Kunming according to how large the area managed is, and how much milk is produced.

- Potential regional impacts

Due to rapid economic growth and increasing demand for rubber in China, 40% of total rubber consumption has to be imported. China has been looking for potential new sites for rubber plantations. Northern Laos is one of the target areas. Negotiations are underway between the two countries for rubber plantations in Northern Laos. China will provide technical support to Lao partners to plant rubber as well as large scale joint ventures possibly equivalent in size to the total area of rubber plantation in Xishuangbanna.

## Field Visit 2: The Dai Village of Nan Yang

Field visit 2 was to a Dai village that is part of the Mengxing administrative village. There are 69 households and a total population of 326 people. The area of rubber plantation in the Mengxing administrative village was 1133.3 ha as of 2000, including 151.6 ha in Nan Yang natural village. On the average, each household owns 2.6 ha of rubber plantation.

Rubber planting in this village can be traced back to 1977/78, when villagers were encouraged to plant rubber by the state farm and village leaders. However, rubber cultivation was not viable until 1983 when the household responsibility system was established. Since then the area of rubber plantation has increased dramatically. Farmers have been receiving profits from rubber since 1989. On average, a household makes \$726.39 to \$847.40 USD from rubber per month. This has improved the lifestyle and livelihood of farmers in the village. Rubber planting and management 'lock' the labour force in the rural area so that few people go out for employment. Rubber is sold on the open market by households who compare prices offered by different private companies, selling at the highest price.

The Government has not encouraged rubber cultivation since 1996 in an attempt to control the structure of local economics. Expansion of rubber plantation has had negative impacts such as a colder climate, drier air, rubber diseases, and soil degradation.

### Resource Governance in the Dai Village of Nan Yang

The hamlet of Nan Yang is a small Dai settlement, adjacent to the paved road linking Jinghong with Mengla and the Lao border, located in the Xishuangbanna region of China's Yunnan Province. It is a typical lowland village whose households utilise an irrigated lowland area used for wet-rice cultivation and other crops, and a surrounding upland space of sloping and forested lands for cultivation and natural forest products. Administratively, Nan Yang is part of the larger six-hamlet Mengxing administrative village, which includes two upland Han settlements.

### Governance History

Nan Yang, like the other rural hamlets in China, has experienced a number of different rural governance regimes over the past five decades, or more. In the past, the use and management of Nan Yang's natural resources was under collective control with heavy direction from the central government concerning resource use and production decisions designed to meet centrally imposed goals and targets. Over time, state policies were modified to increase the opportunity and responsibility for individual households to make choices concerning the use of their agricultural and related resources by allocating certain lowland and upland plots to specific families. This household responsibility planning and action is being implemented increasingly, in part in response to market demands and price signals. In 1998 an important additional step was taken – the local election of village and hamlet leaders.

### Current Governance Arrangements

The use and conservation of Nan Yang's natural resources now takes place in a context in which several actors and institutions interact to mediate and negotiate interests that sometimes align and at others times diverge. Important outside actors and institutions are the State and its various policies and technical agencies, and the market with its various buyers, sellers and investors. At the local level the rules and actions of the locally elected Village Committee along with the choices and activities of the various households are important parts of the governance arrangements.

While all four of these parties (State, market, Village Committee, and households) continue to play a part in the governance of Nan Yang's natural resources the overall trend has been toward decentralisation. Fewer decisions are being made at the central level and more decisions are being made by people and groups close to the natural resources to be used and managed. One Dai woman elected to Nan Yang's Village Committee said, "The election of the Village Committee has made us more autonomous." The allocation of lowland and upland plots to households together with the decentralisation of government functions to village committees creates new opportunities for local actors to shape and control external land use pressures from either the state or the market. A recent example of these state-village interactions is the agreement regarding the land use plan for Nan Yang, and the neighbouring hamlets, that will remain in place for the next 30 years. This land use agreement with the State provides a stable set of resource rules within which both households and the Village Committee can operate – including the ability to enter into agreements with outside investors, if appropriate.



## The Strengths and Limits of Current Governance

The current governance setup, with its combination of public and private actors at both the local and regional levels, appears to create conditions in which households can effectively pursue natural resource-base livelihoods. The allocation of resource rights to individual households, as well as the allocation of some common property rights to the village, has been accomplished. There is sufficient predictability in the rules of resource use to allow households and outside investors to make decisions that require long-term commitments, such as the establishment of rubber tree plantations. Likewise, the current resource governance arrangements seem able to support the multi-year perspective needed to achieve conservation of the village's natural resources.

One possible limitation of the current governance arrangements may be the inability to adjust governance rules if necessary. It is not clear what procedures are in place to examine the consequences of these rules or to deal with unexpected problems that may arise in either the socioeconomic or natural-biological realms. The absence of such procedures and mechanisms could prove to be a highly limiting feature of the current resource governance regime.

### Field Visit 3: The Yao Village of Paozhuqing

#### History

Paozhuqing is an upland Yao village neighbouring Dai, Han, and several other ethnic villages, in Xishuangbanna, Yunnan Province, China. Today, the Yao village of Paozhuqing has better access to roads, markets, and most government services than before. Yao clans and families do not live in their forest village in the remote mountains anymore. Their houses and cultivated lands are scattered on mountain slopes along the road to the small towns of Genghung, and Mengla. Although the road was built during the liberation period, more than 50 years ago, the Yao moved to their present village only in 1973. Yao households have gradually adopted new rubber cultivation technology, while continuing to cultivate their swidden rice, corn, and beans. In this upland village, water and wet rice areas are limited. Only some families own paddy fields.

Land use and tenure system arrangements are complex, and reflect the changes in Xishuangbanna and Paozhuqing village during the three major periods of economic and land policy: 1978-1984, 1985-1990, and 1991-2001. During the first period, agricultural and forest land were allocated to collective group of villages and townships (CRS) and to households (HRS). China implemented a major policy, at the national and regional level, in relation to township-village enterprise (TVE) and state-owned enterprise (SOE). The system had a positive effect on Gross National Product before weakening SOE management and markets. During the second period, 1985-1990, the government gave all SOEs the choice either to sell out or go through a management reform. The state-owned rubber plantation in Xishuangbanna opted for management reform. Throughout this, CRS and HRS policies have remained in place with both positive and negative impacts and at the local level. Paozhuqing has had to learn to adapt to a new market and respond to changing economic and natural resource policies. Since 1999, China has implemented a new governance policy, called Environmental Law, in both cities and rural villages. Key questions include: how this governance policy affects Paozhuqing?; who has key roles and decides on the current rules in sharing and using local resources?; and how villagers practice these rules and adjust their land use?

## Governance

Throughout the three periods of economic and land use policies, the land use and tenure arrangements of Yao clans and households in Paozhuqing have demonstrated how local and state governance interact and affect their lives and livelihoods. Interviews and observation indicated three paralleled governance systems – state, company, and Yao. All three continue to function to guide the local land use and practices of the Yao.

Scattered paddy fields and areas continue to be recognised as private land belonging to clans and households. There are 8 clans in Paozhuqing: Deng, Li, Pon, Lu, Jian, Wang, Yang, and Zhang. Economically, they are different in their resource access and control. Comparatively, the Deng clan is richest, and owns the largest area of paddy fields. Some clans do not have rice fields at all. The former elected leader was from Den clan. At the present, there is a Yang leader serving his second term.

In the period of the state land allocation scheme, swidden (shifting cultivation) fields were given to individual households. State rules are based on expected production outputs generated by each household. Therefore, the state's general guidelines are to allot land according to the number of workers in the household. If the household does not invest in land, the use right on allocated plots is cancelled. Yao clans and village leaders agreed to modify some allocation rules to follow a traditional land allocation in which all households are allocated an equal size of land. This rule gives equal resource access and decision-making power to each household.

There are clear procedural steps to obtain household rubber plots. It is also interesting to observe that formal leaders, clans, and elders play key roles in deciding how the CRS should be managed and shared to individual households. Three years after allocation, the company and village/CRS both hold 50% of the area under planted rubber. The Yao have already decided to share rubber areas equally between all households who have signed up for the rubber plantation enterprise.

Paozhuqing has integrated their own cultural rules into the land use system. For example, in relation to the division of planted rubber land after three years, the land is divided into 36 plots of equal size (clear demarcation is required). To accommodate differences in land quality (distance, elevation, productivity) the plots are then allocated by lottery. Following the lottery, some exchange (trade, sale) within the village is possible. Leasing to outsiders is also possible (but not sale). The Yao clan role in relation to land use decisions is maintained.

A conservation forest of 20 ha was allocated to Paozhuqing. This forest is strictly protected and neither livelihood for local uses in agriculture nor NTFP collection is allowed. Local practices of a day-to-day nature in relation to the forest are unclear. Our brief visit to the village did not enable the research team to obtain accurate information on local uses and practices in relation to the conservation forest.

## Rules on Resource Shortage

Land redistribution is continued among Yao clans and households to enable new couples to start their livelihoods and production. The two clans or households of the couple involved usually make an agreement about the sharing of limited resources, especially land under agricultural production, with the new couple. Recognising that resources are limited according to state forest conservation and the

real situation that karst mountain land (CRS) is unusable for production, the Yao have followed a clear set of rules. The usual practice is that the brides' parents transfer some part of their land to the new couple, if they have enough. Yao clans continue to play a key role in relation to land use governance.

Forest land and agricultural land allocated to households (HRS) have to be transferred back to the CRS to be re-distributed. Some households might want to lease their land to outsiders. There are cases where large tracts of land owned by several households are leased to outside land owners. Those Yao households with access to insufficient labour sell their land or enter into long-term leasing usually for periods of 50 years. Land availability for internal re-distribution among Yao clans is lessening. This means a resource stress and poverty might be the outcome if new land use alternatives do not sufficiently support households. Further, threats are observed to change local governance on internal re-distribution of land.

The shortage of resources is recognised by the Yao. The implications of the lottery and intra-transactions result in the better, more desirable land gravitating towards the well-endowed families/clans (with labour, assets). As time goes on, the village will have less capacity to influence this process. It is interesting to note that Yao clans and leaders have agreed to modify their marriage practices to allow members to marry people from non-Yao groups. During the 1970s, the State promoted rules allowing cross-cultural marriages. However the Yao in Paozhuqing have only started marrying the Han in the last twenty years.

Two interviewed households own and use more than 6.6 ha of rubber plantation and receive subsidies for 3.3 ha of slope land conversion. They have leased land from poor households and households with insufficient labour. This practice hinders equal land distribution among the Yao.

### Changes

Both the State and the Yao community have played key roles in deciding local rules and practices in relation to their livelihoods and land use over the past 50 years. The local decision to move their village to be along the road has brought new economic and administrative conditions including closer links to markets, public services, and government guidance. The Yao have reasonably sustained the traditional authority of their clans and elders who work closely with the elected leaders under the state system.

The practice of land use and distribution of the Yao demonstrates how cultural principles continue to affect current land use and tenure practices. The local decision to allow cross-ethnic marriage means that the Yao community in Paozhuqing and four other neighbouring villages have access to a new land/resource strategy to share control of land resources. Redistribution of land has resulted from the new social rules of marriage. However, poor households are being influenced to accept waged labour employment and inter-group marriage across culture and hierarchy.

CRS and HRS have had some positive effects in terms of stimulating the market economy and allowing some villagers to benefit from new opportunities in rubber plantation and waged employment. If rubber technological transfer to local communities and households is successful, rubber prices may increase, generating more income for new plantation owners. In addition, it may lead to more work for daily wage labours in the villages and neighbouring areas. At present, the 'Grains for Green' policy and

slope land conversion does not benefit needy households in Paozhuqing. Strict conservation rules mean that forest biodiversity change has affected the availability of medicinal and herbal plants for households and the collection/use of NTFPs is not allowed in protected areas.

# field visits in northern Laos

## Field Visit 1: Nahom Village

Nahom is a village with a long history. It survived many years of wars until 1974. The road which passes through the village was built in 1968. In 1991, people from 3 other villages in the highlands nearby moved to this village. The total population is 340 people with 100 households. This village is composed of 1909 ha of protection forest, 15 ha of paddy field, 46 ha of fallow land, 10 ha of cropland, and 2 ha of cabbage plantation. The villagers raise some livestock such as pigs, cows, and goats. In recent years, the government has reduced shifting cultivation and increased rubber plantations. Ninety percent of the villagers cultivate rubber and the total area of rubber plantation is 15 ha with an additional 20 ha nearly planted. There are plans to plant a larger area of rubber in the protected forest and on fallow land in the future. Government policy and markets are the major driving forces behind land use/land cover change in this area.

## Field Visit 2: Nampheng Village

Nampheng is a Khmu village, which relocated to the roadside in 1983. Since then it has grown from only 17 households to 54 households, with 312 people. Land allocation took place in 1997 and villagers participated in defining the boundary of their village area and assigning land use types to the entire area. Previously, shifting cultivation was practiced in the entire village area, but now it is limited to a small area with three 1-hectare plots for each household to cultivate on a 3-year rotation/fallow system. The shifting cultivation area was selected for this purpose because it lacks high levels of NTFP. Overall, households cultivate approximately 1/3 of the pre-1997 shifting cultivation area. Other land use types include production forest, utilisation forest, regeneration forest, conservation forest, protection forest, and a small area for paddy rice production. Local farmers are interested in converting some of the remaining shifting cultivation area to rubber plantations, but are waiting for government support. Currently, the government has only provided support for certain focal villages with an emphasis on converting areas of opium production to rubber production. Local residents also plan to clear areas of the forest to improve conditions for cardamom production.

The delineation of land use types restricts in-migration as there is little unused shifting cultivation area available for new residents. Population growth is high, with around 5 children per family, and education levels are relatively low. The village is well-organised in relation to the marketing of bitter

bamboo, with a cooperative system that purchases the bamboo from residents and sells it to companies.

## History of Village Resource Governance Practices and Resource Use

Nampheng village was established in 1973. The people in Nampheng are Lao Theung from the Khmou Ou, Leua and Rok ethnic groups. They speak Khmou language and are mainly upland shifting cultivators, using the slash and burn method and rotating land use.

The village is organised according to a Village Committee comprising the village chief and his deputy, the chief of security, and representatives from village unions for youth, women, elders, agriculture, forestry, education and health.

Forests in the area of Nampheng were allocated during 1997 and 1998 in collaboration with the District Agriculture and Forestry Office (DAFO) in Namo. The forests were allocated communally to the Village Committee of each village, according to traditional village boundaries and mutually agreed borders. Forestland allocation was an important first step to sustainable harvesting because it gave the Village Committee authority to resolve resource-use conflicts within the village and respond to threats from outside.

There are four types of management systems/categories for allocated forestland:

- Protection Forest: owned by the state, villagers have access to NTFP
- Conservation Forest: owned by the state, villagers have no access
- Utilisation Forest: owned by villages for local use.
- Production Forest: owned by villages for local use.

## Current Situation

After the classification of forests, and forestland allocation, the village has relied heavily on bitter bamboo shoots for their livelihood. There is a large area of village forests in Nampheng (covering a total area of 648 ha, equal to 46.5 ha per household in 1998). In term of resource governance, several points need to be highlighted.

Forest land allocation in 1997 gave local communities control over their own resources. Since the allocation and classification process was carried out jointly by DAFO and the Village Committee, local needs and state concerns for multi-purpose forest management were considered. The structure allows for the decentralisation of resource rights so that local rules and regulations in relation to resource access are easy to set up.

Another aspect of decentralisation is political decentralisation which enables the villagers to elect their own village head each 2-4 years. The elected body is empowered to deal with resource disputes (such as boundary conflicts) within the community and defend their collective resource rights from outsiders. Besides zoning the forests, the elected body also regulates the timing of the bitter bamboo shoot harvest to ensure regeneration of new shoots. The main donor in this case is IUCN which plays a crucial role in resource governance. IUCN helped the village to form a marketing group to deal with Chinese traders, increasing the village's bargaining power. The systematic operation of the marketing

group in collaboration with the Village Committee has contributed to the good governance of marketing activities and promotion of fair trade.

The three thematic groups made a field visit to Ban Pakchiek, Pak Ou district in Luang Prabang Province.

### Field Visit 3: Ban Pakchiek

#### History of the Ban Pakchiek, Pak Ou District, Luang Prabang Province

Ban Pakchiek was established in the year 1921 (84 years ago). The Lue people living in the village initially migrated from Boum Gneum Leue village (Sip Song Phan Na or Xishuangbanna in Yunnan Province, China). Prior to their settlement in Ban Pakchiek, villagers had settled in different locations. In 1953, villagers sought refuge in forest areas but returned to their village the following year. In 1962, once again, villagers sought refuge in forest areas due to the civil war. After the civil war, in 1968, villagers moved to Luang Prabang district. In 1974, the people returned to the village where it is currently located.

Today, the village consists of 122 households and 618 persons (281 men and 337 women). The villagers belong to the Lue ethnic group (a subgroup of Lao Loum or lowland Lao). The Lue in Ban Pakchiek are Buddhists.

#### Current Governance Arrangements

The community's organisation and roles are summarised in the table below.

Organisation	Roles	Elected by	Approved by
Village Head Man	To assist the district officer to implement the district socioeconomic planning.	Villagers	The governor of the province
Deputy Village Head Man	To assist the village headman to implement the village development plan in relation to agriculture, forestry, and education activities.	Villagers	The district governor
Women's Union	To organise and support the women's activities in the village (e.g. weaving group)	Members of the women's union	The head women's union in the district
Youth Organisation	To organise and support the welfare activities in the village.	Members of the youth organisation	The head of the youth organisation in the district
Water User Group	To control and divide the water between the members of the water user group	Villagers	The village headman

## Strengths and Limitations

The strengths and limitations in Ban Pakchiek are as follows.

Conditions	Strengths	Limitations
Livelihoods	<p>Living standard is good</p> <p>Commercial crops (corn, beans), fruit trees and intercropping can support households.</p> <p>More agricultural products have access to markets and farmers are getting a good price for products</p>	<p>Limited time</p> <p>Increased need to seek wage labour</p>
Land use conservation	<p>Villagers understand the land use planning process.</p> <p>Villagers receive benefit from land use planning (3 plots of land) and can identify forest types in the village.</p>	<p>Limited suitable land for cultivation</p> <p>Decreased agriculture yield</p> <p>Increased infestation of imperata grass</p> <p>Decline in the fertility of the soil</p>
Resource rights	<p>Villagers use clean water for drinking and household consumption, water for agriculture (2 wood weirs) and fishing in the Ou River.</p> <p>Villagers can use and collect wood and NTFP from the utilisation forest.</p>	<p>Not enough water in the dry season</p> <p>Natural resources are declining</p>

## Resource Governance in Ban Pakchiek

### Background

Ban Pakchiek, in Pak Ou district of Luang Prabang Province, is a lovely old Tai Lu village that was settled in its present position, along the left bank of Nam Ou, in 1921. The ancestors of these villagers moved to this location from the former Phong district of the current Xishuangbanna region of Yunnan Province. During the war in Lao, the villagers of Ban Pakchiek several times moved away from the area to avoid the fighting. With the completion of the paved road from Boten to Luang Prabang, which passes along the right bank of the Nam Ou, some villagers have moved their homes from the original settlement across the river to be nearer to the road. This move is within the former territory of the village and villagers continue to use land on both sides of the Nam Ou.

### Governance History

Until recently, land use in Ban Pakchiek has largely been arranged through customary governance institutions including selected village leaders and a water users group to manage the established community irrigation system. In the past, there was little involvement of the state in land use arrangements. However, with the establishment of Lao PDR in 1975, throughout northern Lao the state has become increasingly involved in village land use arrangements as part of its policy to discourage



shifting cultivation and eliminate the growing of opium. Land use in Pakchiek is now shaped by those rules.

#### Current Resource Governance Arrangements

The present resource governance arrangements in Pakchiek are an amalgamation of old and new governance institutions. Apparently, the lowland irrigated area is still governed by the traditional water users group. In addition, the village now has its elected headman and deputy who are charged with assisting the district administration in conducting a variety of activities. A major land use governance activity was that conducted by the district agriculture office to survey the lands of the village, and in discussion with the village leaders agree to a land use plan that divides the upland portion of the village into several types of demarcated forests and sets limits to the extent of shifting cultivation that is permitted. Under these rules, each household has been allotted three plots of land to be used as their shifting cultivation plots. All of the villages' shifting cultivation plots are limited to a forest area designated for that purpose. On these upland plots, as well as the lowland rice fields, households are free to use the land as they choose. Given the proximity to the national road, farmers are in a position to make some land use changes in response to market opportunities.

#### Strengths and Limitations of Current Governance

A strength of the current governance arrangement is that some certainty of land use rights has been established, and there are no rules constraining the ability of households to respond to market opportunities – if they can access capital and technology. Another strength is the continuation of customary rules and institutions for governing the use of the river and its resources, as well as the local irrigation system.

One important concern is whether or not the limited shifting cultivation parameters will prove adequate to support village households in meeting their subsistence needs and realising market opportunities. A flaw in the current governance arrangement is that the village will be unable to negotiate with the state to plan and execute land use adjustments if necessary.



## annex 6

# field visits in northern Thailand

### Field Visit 1: Mae Kongkha

Quote from village leader: "Trees are like men, rivers like women...can't have one without the other."

On 23 January 2005, the land use change group travelled to the Mae Khongkha sub-watershed to visit several villages and view the land use mosaic. A good description of the set of villages is contained in the World Agroforestry Centre, Study Tour Program. The notes from the visit are summarised here.

The primary land use change in the watershed has been the substitution of forest fallow shifting cultivation with fixed agriculture, primarily feed maize and seed maize. At our first stop in Ban Long Pong we viewed year-round agriculture (mainly maize).

We talked with the village leader and a farmer who indicated that the villagers are aware of the new economic corridors being constructed. However, villagers are more focused on the market and prices for their goods, in particular, negotiations between their large cooperative of farmers/stakeholders (approx. 1000 members) and a large Chinese-Thai Coop Promotion (CP) Company. The farmers are highly organised. Local watershed management networks operate at basin and sub-basin level.

Farmer cooperatives allow them to collectively hire farm equipment and equipment to construct their own access roads. The cooperative functions as facilitator for buying in bulk and obtaining credit.

Regarding future land use change, they feel that the area for permanent crops will expand, but only in small increments as the amount of cultivated land is quite fixed. There are no fixed boundaries between farming land and forestry land resulting in continuing tension between farmers and foresters.

Regarding the sustainability of fertiliser inputs, the cooperative is working with the CP Company to use/experiment with more organic biological inputs (chicken manure, etc.).

Population growth is quite low, just above replacement.

Farmers are suspicious of fixed agriculture because they think cyclically in terms of shifting cultivation. Fixed agriculture is not something they would have come up with on their own. In one area near Ban

Pha Phueng, the CP Company has moved on as the farmer coops have gained enough marketing knowledge to begin marketing themselves. The question arises as to whether or not permanent agriculture will continue in the absence of the CP Company? The arrival of the CP Company and permanent agriculture followed by its departure may turn into just another level of shifting cultivation.

There also exists a Hmong marketing network, whereby cabbage and similar crops are brought to a farmer cooperative centre for weighing and sale.

In relation to out migration, some farmers send their children to university or other schools for higher education. Some children return, others don't. Whether or not they return seems to be related to the level of education obtained: the higher the level, the less likely they are to return.

#### Resource Governance in the Mae Kongkha Sub-watershed

The Mae Kongkha sub-watershed is at the lower end of the larger Mae Chaem watershed, with a boundary adjoining the Doi Inthanon National Park. The majority of the population is Karen, with northern Thai communities living mostly in the flatter downstream areas. Shifting cultivation has been almost entirely replaced by sedentary agriculture. Maize and upland soy beans are the main crops on hillside plots while more intensively cultivated and irrigated cash crops such as shallots, tomatoes, and pumpkins dominate the lower, flatter areas with some paddy rice still grown for household consumption. Key actors in governance include the CP Company, agricultural cooperatives, a number of watershed networks, linking communities in the same sub-watershed, government agencies, and culturally-rooted, village-level customary institutions. These village level institutions appear to be adept at adjusting to changing social and political conditions. Formal representative institutions such as the Tambon assembly appear to be a presence, but have yet to find a role in environmental governance.

#### Governance History

The history of the northern highlands over the past forty years has had a marked influence on the governance régime in Mae Kongkha. Opium eradication programmes brought highland people directly into the orbit of the central government, as did concerns which peaked at the same time, about border security and possible insurgency. The coercive forces of the government drove land use change during these early stages. The need to offer economic alternatives to opium cultivation meant that force was accompanied by the provision of infrastructure (roads to the villages) and services (education; health programmes; and technical assistance for new crops). Over the past ten years, the private sector, in the form of the CP Company, became a dominant actor in transforming the landscape. The CP Company operated through agricultural co-ops (originally established with government support) which provide agricultural inputs for the company's preferred crop – corn for the production of animal feed. More recently, in the village of Ban Pha Phueng where sedentary agriculture has been practiced longer than in the other villages in the sub-watershed, cropping is more diversified. The CP Company no longer plays the dominant role and farmers now take the initiative in marketing. The CP Company now functions more as a source of credit, not as a supply and marketing entity. Environmental governance has evolved from the direct role of the state, to the dominant role of the corporate private sector, to individual initiative.

Underlying the changing roles of the state, private sector, and individual initiative are local institutions and cultural norms and values, which have played an important role in enabling communities to

maintain environmental sustainability and environmental services such as adequate flows of clean water in streams and rivers. The Karen village of Wat Ban Pha Phueng has acted to 'ordain' trees to protect them, and to extend the area of a 'Birth Forest' (one of several different categories of sacred forest).

### Current Governance Arrangements

The state is represented both by specialised government agencies (including forest and agricultural agencies) and in the form of more recently established institutions such as the Local Assembly. The agencies are playing a diminishing role in people's lives, while the local assemblies are relatively recent innovations, which currently have little impact on decisions about land use. The private sector in the form of the CP Company is very significant as a source of inputs and thus as a driver of land use decisions. Where land use has shifted to more intensive cultivation with a wider diversity of cash crops, the private sector continues to play an important role in land use decisions. The CP Company plays a less direct role now as farmers switch to negotiated contracts with a wide range of possible buyers. The CP Company is now used for financial services rather than as the intermediary for buying inputs and selling produce.

Watershed networks were initiated to reduce environmental degradation and have become the main forum for village action to address issues such as water pollution from pesticides and fertilisers, or for the control and monitoring of consumptive uses of the forest such as the cutting of timber. The networks seem to be more functional in some places than in others. Overall, they represent the rising importance of civil society institutions to mediate between the government and the private sector. The networks are now trying to act together to represent their interests more effectively at the regional and national level.

Finally, it is important to note that the changing land uses in this area have all taken place illegally in formal or statutory terms. Virtually all of the land in the Mae Kongkha sub-watershed is in reserved forest land and there are no moves as yet to release the land to allow formal titling and ownership.

### Strengths and Limitations of Current Governance

Customary practices and beliefs anchor decision making about the environment within communities. It is not yet clear whether the new watershed networks will be an appropriate mechanism for governance beyond the boundaries of one community.

The chronology of change in this watershed suggests that there will be continued changes in the relative power of government agencies, the private sector, and community based institutions. There is a gap in governance institutions directly representing the interests of watershed communities, which the networks, with no statutory standing, may not be able to fill. It is possible that this gap could be filled by the Tambon assemblies, but they have yet to assert a significant presence in environmental governance.

### Field Visit 2: Mae Suk: Opium substitution by highland horticulture

#### Resource Governance in the Mae Suk Sub-watershed of Mae Chaem District

The Mae Suk sub-watershed is a diverse mosaic of land types including intensely cultivated lowland and upland areas, parts of which are forested, while other parts have rapidly been transformed into

intensive year-round cultivation of various fruits and vegetables. Over a period of several decades, opium production has been replaced and little shifting cultivation remains. This transformation began when the Thai government, with the assistance of international donors, began a rigorous campaign to end opium production in the uplands of the northern region of Thailand. Over time, that goal intertwined with other national goals, including the suppression of dissident activities, and later, the conservation of forests. To achieve these goals significant investments were made in a number of ancillary activities, two of which had important implications for changing upland land use. One was the penetration of upland areas, such as the upper portion of Mae Suk, with a road network and the second was support for research and action to identify and support the production of alternative crops for market in the sloping lands to replace shifting cultivation.

### Governance History

During the initial period of the opium substitution programmes, almost all governance rights and responsibilities were in the hands of the central government and its implementing agencies. Police-like actions were undertaken to enforce the ban on opium production and local governance had little role in shaping policies. No doubt traditional leaders (village leaders, clan leaders, religious leaders, irrigation leaders) from the three ethnic groups involved in this transformation (Hmong, Karen and Khon Muang) sought ways to assist their communities to cope with these dramatic changes. Three other important governance changes occurred, especially in the later years of the transformation. Firstly, markets became an increasingly important means of governance. Secondly, the Thai government implemented various decentralisation plans with the result that sub-districts (tambon) and administrative villages gained a larger role in managing local affairs. Thirdly, the NGO sector, which had been expanding rapidly throughout Thailand, also entered Mae Suk and worked with local people to try and create a new watershed governance structure in the form of a local network.

### Current Governance Arrangements

The current governance arrangements in Mae Suk are a legacy of the governance history outlined above. Land use decisions are governed, in part, by the framework of the national government in which opium production remains banned and shifting cultivation is discouraged. Likewise, the market rules that govern the economy of Thailand, and the transportation and information infrastructures reaching Mae Suk, allow households to make land use decisions based on price and demand from various buyers. Village and sub-district level governments appear to have little direct role in governing natural resources, though they play an important role in organising various supporting services. Customary governance continues to influence land use decisions. Examples include Hmong clan leaders helping to settle land disputes or agreeing to establish a conservation forest in their village territory, Karen traditional leaders managing collective forest property, and Khon Muang leaders using traditional organisations to manage their irrigation system. In short, current governance in Mae Suk includes external institutions and actors such as the State and the market, and internal institutions such as village governments, producer households, and customary groups and leaders.

### Strengths and Limitations of Current Governance

One important strength of the current governance system is its ability to support the vibrant market-based land use system that has been created. Upland areas that previously produced limited subsistence crops or illegal opium now produce a wide range of ever-changing fruits and vegetables. There appear to be few short-term constraints to this pattern.

However, there are incipient problems in the watershed for which additional resource governance is required. Foremost among these is the need for new rules and organisations to manage the limited water resources of the Mae Suk sub-watershed. The lowland-based Khon Muang have long been irrigators and have evolved effective water management. The limited irrigated areas in Karen villages likewise have been effectively managed. The new demand for water comes in the uplands where the Hmong and Karen have introduced sprinkler irrigation. While there is little research data to document the effect of this sprinkler irrigation on the water available to the lowland producers, the latter perceive that they are being shorted and significant tension exists among the various cultivators of Mae Suk. So far, no suitable governance management is in place to deal with this matter.

The current governance structure also is lacking what might be called environmental governance capacity. Environmental problems associated with new cash cropping in the sloping uplands – such as pesticide or fertiliser pollution of surface and ground water resources or the loss of topsoil and resulting sedimentation of lowland irrigation systems – are currently neither monitored nor managed. These capabilities are simply absent from the current governance structure and represent a significant limitation.

### Field Visit 3: Mae Tum: Active shifting cultivation

#### Ban Kok Noi: The Lua shifting cultivators

The Lua are indigenous people living in northern Thailand who have practiced rotational shifting cultivation for centuries. The Ban Kok Noi Lua village has been in its current location for more than 150 years with a total population of 200 people in 45 households. They maintain a 7-year shifting cultivation cycle in comparison to the 9-year cycle in place 8 years ago.

#### Governance History

The Mae Chaem watershed used to be an opium cultivation area. The Thai Government has declared it a critical watershed as well as a National Park. State policy in past decades has promoted the sedentarisation of land use practices resulting in the reduction of the shifting cultivation cycle and intensification of land use. Although the Lua have been Christian for decades, the worship of natural spirits is commonly practiced for shifting cultivation and natural resource management. They believe each land has its own spirits, which need different sacrifices. Rituals called 'mopi' are held by the spiritual leader. The Lua have maintained good relationships with other tribal groups such as the Karen.

#### Current Governance Arrangement

Shifting cultivation is still the predominant livelihood activity. Swidden-fallow fields are still common property. The selection of swidden plots is based on the collective decision of the community at the village meeting. Although the spiritual leader has the right to choose a sub-plot, other villagers may have their own traditional boundary within the plot. In the case of failure of crops, villagers can borrow food from a communal 'rice bank' at 10-20% interest. The current village headperson has been elected by the whole community and has nominated two deputy headpersons. The Government pays a limited subsidy to the elected village headperson. In order to devolve power to the local community, a new institution called the 'Tabang' has been introduced as an experiment. Two members have been elected as village representatives to the 'Tabang' for higher level meetings and policy planning.

## Strengths and Limitations

- Livelihoods

The Lua practice of shifting cultivation is in transition, from a subsistence to a market economy, and from rotational forest fallow to permanent agriculture. However the intensification of upland areas has been constrained by poor road access and water shortages in the dry season.

- Land use/conservation

The local community perceives conservation as a threat to sustainable land use and livelihoods. Local people say that they will continue to practice shifting cultivation as their culture and livelihood dictates.

- Resource rights

The area has been categorised as a conservation zone and a class A watershed, hence the Lua do not have any land title over the land. Their resource access has been confined.

## Field Visit 4: Lamphun: Longan grower's association

### Rural Governance and Longan Production in Lamphun Province

#### Background

Over the past several decades, the Lamphun Province has become the centre of longan (lamyai) production in Thailand. Thousands of hectares of low land, previously used for wet-rice production, as well as some degraded forest lands have been converted to longan orchards. Much of this land conversion occurred during the economic boom in Asia and at a time when longan prices were higher than today. In part, this land conversion was fuelled by the rising price of land throughout the Chiang Mai valley and the investment funds available to the then growing middle class of Thailand.

#### Governance History

The governance actions supporting the development of longan orchards appear to largely have occurred at the national level. There were few, if any, local rules or regulations that either impeded or propelled this pattern of land conversion. National policies for titling land, which began in the 1980s, created conditions of ownership security that allowed outside investors to purchase land for conversion to the high-value crop of longan. It also encouraged existing owners to make the financial investment in their land. This land conversion process was aided by prior government policies that helped establish producer cooperatives, which supported the provision of needed inputs and services for marketing longan. Recently, with support from the national government, the Chiang Mai University has established the Hariphunchai Longan Research and Development Center in Lamphun Province to deal with technical production matters.

#### Current Resource Governance Arrangements

Currently, resource governance of longan orchards is almost exclusively in the hands of the individual land owners who make decisions in response to market prices. However, the state has been intervening in the market to set quotas and prices for state-supported longan purchasing with very negative results for many producers and their local cooperatives. Some local producers are trying to reshape these state policies by establishing a province-wide network of longan growers to act as an



advocacy group. Thus, the current arrangements for longan governance are a combination of state level actions and policies, and local level civil society action.

#### Strengths and Limitations of Current Governance

An important weakness of the current arrangements is that the state actions are not in tune with the conditions and needs of the local growers. It appears that the state's intervention in longan pricing has introduced considerable confusion in the market. The strength of the current governance setup is the existence of producer cooperatives at local and provincial levels. These groups have facilitated the formation of an informal network of growers mobilised to advocate for needed changes in state policies.



## annex 7

# case study abstracts

### *Small-Scale Irrigation in Upland Communities in Lao PDR: A Research Framework concerning the Governance of Property Relationships in Transitional Areas of Upland Southeast Asia*

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Upland tribal communities in some areas of Laos are under increasing social and ecological pressure to abandon traditional means of shifting cultivation in favour of irrigated wet-rice cultivation. The transition from one mode of cultivation to another, results in changes in the structure and organisation of property relationships within the community that require new rules of communal governance. How new property relations are defined will affect the distribution of productive assets within the community and will have a profound impact on how irrigation systems are managed. This paper reviews the literature concerning the governance of property rights and common pool resources in the context of transitions from extensive to intensive modes of cultivation in upland areas of Lao PDR. The paper outlines a research framework that explores how social norms and patterns of reciprocity, governing traditional property relationships in subsistence farming communities, change when new technologies of agricultural production are introduced. Although specific attention is focused on small-scale irrigation projects in northern Laos, this framework may have relevant research applications for other upland areas in Southeast Asia where people and organisations increasingly compete for control over new productive assets, such as irrigable land.

### *Building Sustainable Livelihoods in Lao PDR: Untangling Farm from Non-farm, Progress from Distress*

Bounthong Bouahom<sup>1</sup>, Linkham Douangsavanh<sup>1</sup> and Jonathan Rigg<sup>2</sup>  
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Lao PDR is among the poorest countries in the world. The majority of households continue to rely on farming to meet their needs. The country is also going through an important transition, as the market extends into formerly remote rural areas. Drawing on surveys of nine villages across three sites, the paper elucidates how households are managing the transition from subsistence to market economy.

Agriculturally resilient communities with considerable potential are contrasted with villages where the scope for increases in farm output are sharply constrained. The growing role of non-farm activities is highlighted and a distinction drawn between 'distress' or 'progressive' diversification. The paper argues that diversification is propelled by very different forces and has markedly different implications in livelihood terms. It also suggests that while general statements can be made about livelihood transitions in the country and the production and reproduction of poverty, at a household level it is often not possible to 'read-off' likely livelihood conditions from a mere assessment of resources.

### *Ecological and Economic Impacts of Land Use Change in Baoshan, Yunnan, China*

Chen Huafang and Laura Ediger  
World Agroforestry Centre, Kunming, China

Patterns of land use are inextricably linked to the household economies of people who utilise land as a resource. In this paper, we describe the land use change in a small mountainous watershed in western Yunnan from 1989-2001 using a combination of RS, GIS and landscape ecology methods, and link these results with the livelihood changes of local farmers. Farmland has been reduced dramatically in the last 10 years by national-scale afforestation programmes. This has affected not only the ecological landscape but the social and economic landscape, as farmers have adapted their resource allocation strategies in response to the loss of farmland. Landscape fragmentation, as indicated by patch dynamics, has decreased. Small scattered patches of forest and grassland have been consolidated into larger patches as existing areas of farmland are reduced by tree-planting projects. Meanwhile, the amount of time spent in off-farm employment has increased due to reduced agricultural labour requirements. The landscape itself no longer provides sufficient grain or income to meet basic needs, and so forces a shift in labour allocation. This in turn leads to a less intensive use of local agricultural and forest resources. This marks a transition from a land-based to a cash-based economy, which may result in more diversified natural resource management.

### *Ethno-market, Ethno-marketing and Ethno-marketable NTFP (Non-timber Forest Products): Market Characteristics of Commercial NTFP in South Yunnan after Market Liberalisation*

He Jun  
Center for Biodiversity and Indigenous Knowledge, Kunming, China

Since 1978, Chinese market reform has adopted the notion of neo-classical theory to increase market competition and promote free market principals. Simultaneously, reform is attempting to abolish the central planning economy in order develop a 'market economy' as the key mechanism for resource allocation. After more than two decades of this reform, the market activities in rural society, especially the ethnic regions of Yunnan present an interesting and complicated field of research. This study examines the market impact on rural sector and explores farmers' actual marketing practices and their understanding of markets. Based on ethnographical perspectives and research on NTFP (non-timber forest products) in South Yunnan, this paper argues that the current rural economic structures continue to function, with considerable influence from local cultural, historical, and political conditions, in association with emerging global markets or globalisation. These factors coexist to make ethno-

marketing activities possible. In this regard, the strength of local market controls is important for local natural resource management and fair trading.

### *Trade along the China-Vietnam Border: Under the Veil of Opportunities and Threats*

Fredrich Kahrl  
World Agroforestry Centre, China

China's rapidly expanding capacity in agriculture and forest production brings a new urgency to the development challenges facing Vietnam's northern upland region (NUR). China's growing economy and the surge in bilateral trade between China and Vietnam continue to inspire optimism that trade with China will create new markets for smallholder farmers in the NUR, because of their proximity to the Chinese border. However, the majority of Vietnam's limited agri-product exports to China are presently produced in the Red River Delta and regions to its south. Without substantial public and private investment in markets and market support systems in the NUR, regional infrastructure development and trade initiatives will further marginalise the region. Similarly, as China undergoes a nascent 'supermarketisation' process and restructures agriculturally as part of its accession to the World Trade Organization, NUR farmers will find it increasingly difficult to compete vis-à-vis price or quality in third-country, domestic, and local markets. In response to greater commercial exposure to China, rural development paradigms in the NUR, and across Greater Montane Mainland Southeast Asia (MMSEA), must extend beyond current time-delimited, donor-driven approaches and incorporate more invested, self-sustaining institutional forms. Scenarios for one potential form – not-for-profit companies – are briefly explored here.

### *The Loss of Shifting Cultivation: A Case Study of Land Use Change in Mengsong, a Hani Community in South Yunnan*

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Center for Biodiversity and Indigenous Knowledge, Kunming, China

Although shifting cultivation in China was not specifically forbidden by government policy, this form of agriculture is declining. In Mengsong, Xishuangbanna, where shifting cultivation has long been a traditional part of the agricultural system of the upland Hani people, the reduction in shifting cultivation was found to be caused by paddy field supplements, mining industry inducement and a government investment programme. All these factors necessitated a choice in local land use; between swidden cultivation and paddy rice fields, between shifting cultivation and mining, and between shifting cultivation and economic cash crops. Whenever the government tried to stop shifting cultivation by changing land tenures on swidden areas, it has always failed due to local actions against such changes. Whether or not, shifting agriculture and agro-biodiversity continue to be lost will be determined by the respective roles the state and the people play during this process of change.

## *Expansion of Rubber Changes Socioeconomics and Creates Environmental Concerns in Menglun Township, Xishuangbanna, Southwest China*

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Significant changes in land use and land cover have occurred in the Menglun Township of Xishuangbanna, Southwest China. This is a place with outstanding ecological value and is representative of the ecological and socioeconomic conditions of the region. An analysis of spatial data showed that since 1980 rubber plantations have expanded greatly, generally at the expense of forest and shifting agriculture. The majority of this rubber expansion was in the lowland areas where temperate conditions and road access enabled the development of the rubber industry. Economically, most villages showed an increase in standard of living and net incomes, most notably in the lowland villages. However, the increasing population and improving living standard of the people will place more pressure on the environment and on limited resources, making the future of these industries unclear. Although the Government considers rubber and other plantations such as tea and sugar to be 'green industries', the loss of agricultural lands, shifting agriculture, and forest, together with a dilution of ethnic cultural traditions, suggests that the potential impacts of these policies should be considered carefully. The results seen here should also be taken into account in relation to other communities such as northern Laos, where the rubber industry is looking to expand greatly in the near future.

## *Loss of Access and Reclamation of Land Rights: A Case Study of Landless Farmers' Social Movement in Northern Thailand*

Yuki Miyake

Faculty of Social Science, Chiang Mai University, Thailand

Northern Thailand has increasingly promoted the commercialisation and privatisation of communal land over the past few decades, especially through the Land Titling Programme introduced in 1985. The programme was an attempt to secure the farmers' land tenures and their better chances in a free market economy. Actual results were often quite different, however, and although the changes have increased cash incomes and brought modernisation to some villagers, it also deprived poor villagers access to land and made many of them more vulnerable. Farmers' movements have evolved in the late 1990s as a result, with more than 3,700 landless households in 23 areas of northern Chiang Mai and Lamphun Province occupying land and demanding access rights. This study explores the complex factors leading to this situation, using ethnographic methods and access analysis over a three-month field investigation in Lamphun village in 2002-2003. Research involved in-depth interviews with farmers' group leaders and participants from nine affected villages, interviews of NGO staff, and the consolidation of lessons from the farmers' stories. Several major trends were identified, including, existing unequal power relations among poor farmers, wealthy capitalists, and the local authorities; the lack of information or knowledge of farmers of their rights, especially when selling new titled land; western-oriented concept of exclusive private property rights, replacing a more flexible local land use system, ignoring 'social relations' and causing problems and conflicts; and forcing landless farmers into wage labour, while small-scale farmers are trapped in a vicious cycle of poverty and debt. In response, some villages have decided to maintain reclaimed land as communal, allocating plots to individuals with 'use rights' (but no right to sell), as in the case of the Rai Dong village. However, this

communal system still faces problems, such as preference of some to sell land for quick cash income and single cash crops, or land left idle as farmers pursue wage labour, and limited geographic scope of the system to a few villages. Efforts continue to find a balance between livelihood and land security, with exposure to ever-increasing market pressures.

### *Beyond Borders: Emerging Forms of Transnational Advocacy for Improved Transboundary Environmental Governance in the Greater Mekong sub-region*

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Within the past decade, nations located in the Greater Mekong sub-region (GMS), often collaborating with regional international institutions, have facilitated a range of frameworks and mechanisms that promote regional cooperation. While enhancing economic cooperation and trade liberalisation, these regional initiatives pose serious challenges for inter-state relations and the equitable and sustainable use of transboundary natural resources. Concern is mounting over how China's development patterns are causing environmental harm in downstream GMS countries, potential conflicts surrounding who has 'sovereignty' over shared resources, and transboundary impacts of development projects. Furthermore, economic development in the GMS, primarily determined by the region's governments and multilateral institutions, has not adequately addressed the interests and concerns of civil society, particularly those pertaining to transboundary environmental impacts. Institutions, such as the Asian Development Bank's (ADB) GMS Regional Cooperation Program, the Mekong River Commission (MRC), and the Association of Southeast Asian Nations (ASEAN) have been criticised for lack of community engagement and their promotion of large-scale projects neglecting ecologically sustainable alternative development. It is regional citizens who most suffer from adverse environmental impacts, yet they are not represented in the environmental networks to negotiate regional solutions. Therefore this paper explores emerging alternative mechanisms that can contribute to enhanced environmental governance at the regional level. Specifically this paper examines the role of 'local' civil society and the emergence of transnational civil society advocacy efforts in the region, through the analysis of two cases, to address transboundary environmental impacts posed from China.

### *Agricultural Competitiveness in Cambodia*

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The Rockefeller Foundation has funded a research project on agricultural competitiveness to be conducted by four institutions in Cambodia, Thailand, Vietnam, and Laos, under the overall coordination of the Cambodia Development Resource Institute (CDRI). The first phase of the research was conducted by CDRI from January 2003 to July 2003 to identify the scope and scale of the commodity systems of major non-rice crops in Cambodia. A report on Phase I on 'Production, Marketing and Processing of Cash Crops' was produced and formed part of the Annual *Cambodian Economic Review 2003* published by CDRI in September 2003. Phase I exploratory analysis identified four cash crops (soybean, cassava, cashew, and maize) as being the most important for the country after rice, and thus suitable candidates for further, in-depth investigation in Phase II. In Phase II, CDRI entered into partnerships with Can Tho University in Vietnam, Chulalongkorn University in Thailand, and

the National Economic Research Institute in Laos. The proposed presentation includes a discussion of the main findings from the Phase I research and observations pertaining to upland areas of the MMSEA.

### *Study on Land Use and Livelihood Transition in Northern Laos*

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The landscapes of mountainous northern Laos are undergoing rapid transformation as the region becomes integrated into the regional economies of China and Thailand. Rural livelihoods in the upland areas, based on subsistence agricultural production, are changing as more households are engaged in the market economy. The current study examines changing landscape and livelihoods in northern Laos, through spatial analysis and review of the agricultural sector. In particular, the study reviews land use and forest cover changes between 1993 and 2000, and agricultural production in four northern provinces. The result of the study indicates increased forest cover in the last decade, which signifies decreased expansion of areas under shifting cultivation. Agricultural sector analysis in the four northern provinces indicates the increasing importance of commercial agricultural production over subsistence agricultural production. Policy analysis also indicates the impact of government policy on controlling shifting cultivation practices in the upland areas, and increased government efforts to promote cash crop production in the northern provinces.

### *Forest Conversion and Land Use Changes in Farmlands of Northwest Yunnan, China: the Challenges of Measuring Forest Quality with Remote Sensing*

Andrew Willson  
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Across Southeast Asia the major cause of deforestation is agricultural expansion. However, Yunnan Province typifies the situation in China, where, following a long history of forest utilisation and dramatic rural policy changes, various studies point to a recent increase in forest cover. Such studies are regional and either use coarse resolution satellite imagery as a monitoring tool or rely upon country-provided statistics, which use varying and often changing 'forest' definitions. There is debate about whether there needs to be greater emphasis on forest quality rather than cover. This paper aims to quantify forest cover and land use changes in a Tibetan-dominated rural township located within one of the world's biodiversity 'hotspots' in northwest Yunnan Province, China. Three sequences of classified Landsat satellite imagery dating from 1981 to late 1999 and other digital datasets were used in a hierarchical rules-based classification approach. Six land use/cover classes were classified with acceptable accuracy assessment scores. The results show an aggregate decrease in area under cultivation of 37%, and an average aggregate decline in both fir and pine type forests of 23%, mostly due to an active logging industry. Overall, grassland increased as a response to increasing dependence on livestock by the rural communities, while high elevation rangelands decreased in area. Shrub land increased by over 100% during the study period. Shrub land is a variable category that illustrates the limitations of remote sensing on this scale – it was impossible to discriminate between poorly developed forest regeneration and/or re-planting, secondary succession of abandoned grasslands and a variety of other shrubby community types. This study highlights the limitations of



considering only gross forest cover, and the difficulties of mapping land use in diverse mountainous areas supporting multiple land uses. It is suggested that investigating and attempting to delineate forest structural and floristic variability (in particular historical post-logging regeneration, rangeland conversion and reforestation) will improve image classification and the applicability of land use/cover mapping. Also, it is argued that if regional statistics of forest cover are to be used as a basis to formulate policy, they must first be qualified at smaller spatial scales to ensure greater validity.

### *Multi-scale Scenarios for Exploring Future Land-use in the Greater Mekong region*

Louis Lebel and Darika Huaisai  
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Over the past two years we have been working towards integrating our practical experiences in trying to improve the governance of natural resources in the Mekong region with the theoretical and descriptive research on multi-scale environmental change. Adopting a complex adaptive systems perspective towards human-environment dynamics has led us to question the conventional role attributed to knowledge systems in development, and of technical expertise in particular, in decision-making, management, and policy formulation.

It has also increased our scepticism about the capacity and desirability of 'control' and 'efficiency' as underlying rationales for managing the evolution of landscapes, both rural and urban. Uncertainties and complex relationships between social and ecological changes at multiple-scales typically generate surprises that society is not very good at anticipating. We are developing a framework based around the idea of navigating changes in social-ecological systems that accepts negotiation and contest in political arenas as a key process rather than a hindrance to sustainability. We depart from the more technocratic approaches within this field to include issues of governance and science within the framework rather than existing outside it. Having a realistic and defensible model of governance seems essential to go beyond understanding land-use and cover dynamics to influencing development in fair ways.

Scenario-building exercises could play a role in creating arenas over which stakeholders at different levels can learn about each others interests and aspirations and some of the biophysical and natural resource constraints to development. Nested scenarios are a useful extension of conventional exercises in that they allow the possibility of exploring linkages at multiple scales. Cross-scale issues can be handled through consideration of 'discordant scenarios'.

This paper describes a set of nested scenarios developed for exploring the effects of future changes in land-cover on ecosystem goods and services and livelihoods. The focus of finer-scale analyses is on the mountainous regions within the Greater Mekong region, but recognises that understanding changes here requires the broader context of mainstream development in the capitals and coastal plains of the region.

The approach taken was explicitly multi-scale and combined quantitative and qualitative methods. Qualitative story-lines were developed in parallel with more mechanistic soft-models and sequence pathways using graphical summaries, and a simple landscape simulation model. Soft models help stakeholders and other participants better articulate the underlying assumptions in their own and alternative models of social and environmental change without getting distracted by the misleading

over-quantification. In this sense they stand somewhere between written and verbal stories and systems models. The story-lines of the scenarios helped guide the development of the simulation model and evolved landscape trajectories, which in turn were interpreted within the qualitative context provided by the scenarios.

Two parallel sets of contrasting scenarios were developed at the Northern Thailand and Mekong region scales. The scenarios were constructed to intentionally capture the large uncertainties about how livelihoods and regions could engage with wider markets and social structures. At the Mekong River Basin scale of analysis, these four scenarios are labelled after the kind of market integration that they imply, namely, 'Agro-Globalisation', 'Globalisation', 'Compartmentalisation', and 'Ruralisation'.

A simulation model, the Ecosystem Landscape Scenario Explorer (ELSE), was developed to help explore in a spatially explicit and semi-quantitative way the storylines and texts. The modelling work is still at a relatively early stage of development with most of the emphasis so far on providing a platform for exploring relationships and sensitivities. The model is built around a core set of empirically derived regression equations to which are added rules for altering some of the key map layers. The current version includes the rudiments of a road-extension algorithm. Provisions are made for adding consideration of the dynamics of population distribution, protected area systems, and irrigated areas.

## The Editors

**Xu Jianchu** was Professor of Ethnoecology at Kunming Institute of Botany, the Chinese Academy of Sciences. Currently he is the Programme Manager for Water, Hazards and Environmental Management at the International Centre for Integrated Mountain Development based in Kathmandu, Nepal. Earlier, he was the Executive Director of the Center for Biodiversity and Indigenous Knowledge, an NGO for biodiversity conservation, community livelihoods, and watershed governance based in southwest China. He currently serves as the Vice Chair of the Board of the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC), and is on the Scientific Steering Committee of the Land-Use and Land-Cover Change Project of the International Geosphere-Biosphere Programme (IGBP) and the International Human Dimensions Programme on Global Environmental Change (IHDP). He has vast field experience and international exposure on cross-culture and cross-border comparison and broad field experience in Southeast Asian countries as well as in the Himalayan region related to indigenous knowledge, biodiversity conservation, global environmental change, ecosystem assessment, forest management, land use and land cover change, and policy analysis. He has also published extensively in edited volumes and peer reviewed papers in scientific journals.

**Chun K. Lai** has degrees in forest management and international forestry from the University of Maine and Yale University. He has more than 25 years of experience worldwide, working closely with partners to develop and implement innovative initiatives to improve community forestry, agroforestry, and natural resource management for the benefit of farmers and grassroots organisations. He has worked for several international organisations, including RECOFTC, Ford Foundation, ICRAF, FAO, CIFOR, IFAD, ICIMOD, World Bank, USAID, Winrock International, and the U.S. Peace Corps. Lai has produced and presented a large number of publications, papers, proposals, and project documents. He serves as a board member for the International Society of Tropical Foresters, and the Global Caucus on Community Based Forest Management.

**Sardu Bajracharya** holds a Master of Science degree in Environmental Management from Pokhara University, Nepal, and a Bachelor's degree in Environmental Science from St. Xavier's College, Kathmandu University. She joined the International Centre for Integrated Mountain Development in 2003, where she is a researcher in the Water, Hazards and Environmental Management Programme. She worked for the WWF-Nepal Program in the Northern Mountains Conservation Project prior to joining ICIMOD. Her main interest lies in community forestry, schemes for payment for environmental services, and global climate change.

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**information markets**  
**thematic synthesis and future research questions**  
**take-home messages, follow-up actions and feedback**  
**mobile workshop wrap-up: the road goes on**  
**annexes**

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