

**Tropical Forest Research**

# **Planning, Participation and Policy**

**Hilltribes overcoming the dichotomy  
between agriculture and forest  
preservation in Northern Thailand**

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# Preface

Adopted at the 1992 United Nations Conference on Environment and Development, at which 178 countries were represented, *Agenda 21* includes a section devoted to forests. Together with the UNCED Forests Statement, *Agenda 21* forms a basis for international cooperation on the management, conservation and sustainable development of all types of forests. The Rio resolutions also serve as the foundation for a process of national-policy modification designed to stimulate environmentally compatible sustainable development in both industrialized and emerging countries.

Ideally, *sustainable development* builds on three primary guiding principles for all policy-related activities: economic efficiency, social equity and ecological sustainability. With regard to the management of natural resources, this means that their global utilization must not impair future generations' developmental opportunities. With their myriad functions, forests in all climate zones not only provide one of humankind's most vital needs but also help preserve biological diversity around the world. Forest resources and wooded areas must therefore be sustainably managed, preserved and developed. Otherwise, it would neither be possible to ensure the long-term generation of timber, fodder, food, medicine, fuels and other forest-based products, nor sustainably and appropriately to preserve such other important functions of forests as the prevention of erosion, the conservation of biotopes, and the collection and storage of the greenhouse gas CO<sub>2</sub>.

Implemented by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), the "Tropical Forest Research" project aimed to improve the scientific basis of sustainable forest development and, hence, to help implement the Rio resolutions within the context of development cooperation.

Application-oriented research served to improve our understanding of tropical forest ecosystems and their reciprocity with the economic and social dimensions of human development. The project also served to promote and encourage practice-oriented young German and local researchers as the basis for development and dissemination of ecologically, economically and socially appropriate forestry production systems.

Through a series of publications, the "Tropical Forest Research" project made the studies' results and recommendations for action available in a form that is generally comprehensible both to organizations and institutions active in the field of development cooperation and to a public interested in environmental and development-policy affairs.

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## Abbreviations

<b>ADB</b>	Asian Development Bank
<b>CFA</b>	Community Forestry Act
<b>CLM</b>	Community Based Land Use Planning and Local Watershed Management
<b>CMU</b>	Chiang Mai University
<b>COHAN</b>	Centre for Coordination of Hilltribe Affairs and Eradication of Narcotic Crops
<b>DHC</b>	District Hilltribe Committee
<b>DLD</b>	Department of Land Development
<b>DOAE</b>	Department of Agricultural Extension
<b>DOLA</b>	Department of Local Administration
<b>DPW</b>	Department of Public Welfare
<b>FAO</b>	Food and Agriculture Organisation
<b>GIS</b>	Geographic Information System
<b>GPS</b>	Geographic Positioning System
<b>GTZ</b>	Gesellschaft für Technische Zusammenarbeit
<b>ICRAF</b>	International Centre for Research in Agroforestry
<b>LUP</b>	Land Use Planning
<b>LUPT</b>	Land Use Planning Team
<b>MHS</b>	Mae Hong Son
<b>MOAC</b>	Ministry of Agriculture and Cooperatives
<b>MOI</b>	Ministry of Interior
<b>MRC</b>	Mekong River Commission
<b>NESDP</b>	National Economic and Social Development Plan
<b>NGO</b>	Non-Governmental Organisation
<b>NNCO</b>	Northern Narcotics Control Office

<b>ONCB</b>	Office of Narcotics Control Board
<b>PLP</b>	Participatory Land Use Planning
<b>RFD</b>	Royal Forest Department
<b>RRD</b>	Regional Rural Development
<b>RSD</b>	Royal Survey Department
<b>SFS</b>	Sustainable Farming System
<b>SMRP</b>	Sustainable Management of Natural Resources Project
<b>TA-HASD</b>	Thai Australian Highland and Social Development
<b>TAO</b>	Tambon Administration Organisation
<b>TC</b>	Tambon Council
<b>TDRI</b>	Thailand Development Research Institute
<b>TFSMP</b>	Thai Forestry Sector Master Plan
<b>TG-HDP</b>	Thai German Highland Development Programme
<b>TÖB</b>	Tropical Ecological Support Programme
<b>TTC</b>	Technology Transfer Centre
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>UNFDAC</b>	United Nations Fund for Drug Abuse Control

## Summary

The highlands of northern Thailand are an example of a contradictory situation arising when a centralised government system extends its control to remote areas and clashes with traditional shifting cultivation practices. On the government side, policy is characterised by conflicting interests between forest preservation on the one hand, and the integration of ethnic minorities on the other. Today, the main focus lies on the restoration of forest cover by granting limited permanent land use rights, with some emphasis being placed on the official registration of hilltribe villages. Hilltribes, on the other hand, are looking for land security to meet their subsistence needs. It is a precondition for them to modify their traditional farming systems or to explore other alternatives to secure a livelihood, such as ecotourism. The issue has become one of mediation and conflict resolution in order to overcome the dichotomy between forest protection and agricultural subsistence.

In spite of a lack of policy framework, highland development activities have been utilising more participatory approaches, for example in the Community Based Land Use Planning and Local Watershed Management (CLM) of the Thai-German Highland Development Programme (TG-HDP) in Mae Hong Son. This research project combined the CLM approach with GIS in order to go beyond the demarcation of land types and to connect the village level to higher planning bodies like the emerging Tambon (sub-district) Administration Organisations. In light of the fundamental problem of highland development described above, and building on the CLM approach, land use maps were digitised to help overcome contradictions between central land use classifications and local village boundaries. Stumbling blocks to participatory planning are illustrated and recommendations for a co-ordinated policy for highland development are made.

## Summary (Thai)

พื้นที่สูงทางภาคเหนือของประเทศไทยเป็นตัวอย่างสำคัญอันหนึ่งที่แสดงถึงสถานการณ์ความขัดแย้งที่เกิดขึ้น เมื่อระบบราชการส่วนกลางขยายการควบคุมไปยังพื้นที่ที่ห่างไกล เกิดความขัดแย้งกันทางด้านผลประโยชน์อันเนื่องจากการอนุรักษ์ป่าไม้ และการรวบรวมชนกลุ่มน้อย ซึ่งมีการทำไร่เลื่อนลอยมาช้านานซึ่งขัดกับการวางแผนราชการส่วนกลาง ในปัจจุบันรัฐบาลมุ่งเน้นการฟื้นฟูสภาพป่าไม้และจำกัดการใช้ที่ดินเพื่อการอนุรักษ์ป่า โดยให้ความสำคัญในการจัดตั้งหมู่บ้านชาวเขาอย่างเป็นทางการรองลงไป ในขณะที่ชาวเขาต้องการหลักประกันในที่ดินทำกินอันเป็นสิ่งแรกที่สนองความจำเป็นในการยังชีพก่อนที่จะปรับเปลี่ยนระบบการเพาะปลูกแบบดั้งเดิม รวมทั้งการหาทางเลือกเพื่อสร้างหลักประกันความเป็นอยู่ เช่น การท่องเที่ยวเชิงอนุรักษ์ ประเด็นนี้ได้กลายเป็นหนึ่งในการประนีประนอมและการแก้ไขความขัดแย้งเพื่อหาทางออกให้กับปัญหาระหว่างการพิทักษ์ป่าและการทำการเกษตรเพื่อยังชีพ

แม้ว่ายังขาดกรอบนโยบายที่ชัดเจน แต่กิจกรรมการพัฒนาพื้นที่สูงได้เปลี่ยนมาเน้นการมีส่วนร่วมของชุมชน เช่น การวางแผนและบริหารการใช้ที่ดินและลุ่มน้ำโดยองค์กรชุมชน (Community Based Land Use Planning and Local Watershed Management - CLM) ภายใต้โครงการพัฒนาที่สูงไทย-เยอรมัน ที่จังหวัดแม่ฮ่องสอน ทั้งนี้เพื่อให้มีให้จำกัดขอบเขตอยู่เพียงการจำแนกประเภทที่ดิน และเพื่อขยายกระบวนการจากระดับหมู่บ้านสูงขึ้นไปยังหน่วยงานระดับวางแผน อาทิ องค์การบริหารส่วนตำบลที่เพิ่งจัดตั้งขึ้น โครงการวิจัยนี้จึงได้ผนวกแนวทาง CLM เข้ากับสารสนเทศทางภูมิศาสตร์ (GIS) จากปัญหาเร่งด่วนที่กล่าวมาข้างต้นและการส่งเสริมแนวทาง CLM โครงการฯ จึงจัดทำแผนที่การใช้ที่ดินโดยใช้คอมพิวเตอร์ เพื่อแก้ปัญหาคือความคลาดเคลื่อนในการวางแผน เช่น การจำแนกประเภทการใช้ที่ดิน และพื้นที่ของหมู่บ้าน นอกจากนี้ โครงการฯ ได้นำเสนอภาพรวมอุปสรรคและปัญหาของการวางแผนแบบมีส่วนร่วม และเสนอแนะให้กำหนดนโยบายประสานงานการพัฒนาที่สูงต่อไป





# 1 Introduction

This research project was hosted by the GTZ assisted Thai German Highland Development Programme (TG-HDP) in Chiang Mai. It focused on the Community Based Land Use Planning and Local Watershed Management (CLM) approach in the two project areas where it was implemented in Mae Hong Son province in the north of Thailand. This project combined theoretical and technical research approaches with the reality of a development programme, thereby creating a direct link between research and implementation. Although the research was conducted by a university, it was based at a bilateral government development programme. TÖB guidelines require a linkage with a local university in Thailand, to encourage research co-operation between German and Thai researchers. At the same time, results are to be made available to local research and extension organisations. In this case, this was particularly relevant, since the TG-HDP closed prior to the completion of the research. Therefore, results and conclusions needed to focus on how local institutions can implement them, be they informal farmer or village networks, or other organisations active in the area.

## 1.1 Background to highland development

The key factor that triggered highland development was the attempt of the Thai government to eliminate opium-poppy (*Papaver somniferum*) cultivation by outlawing it in 1959. This ban was followed by opium control projects funded by the United Nations Fund for Drug Abuse Control (UNFDAC), which was established in 1969. Opium control was formalised with the creation of the Thai Central Committee for Drug Abuse Control in 1975 (RENARD 1997, 308) and accompanied by a wide range of highland development programmes with foreign support. It is an irony of history, that one of the oldest European crops for medicinal purposes and exported since the 8<sup>th</sup> century, for which Britain, France

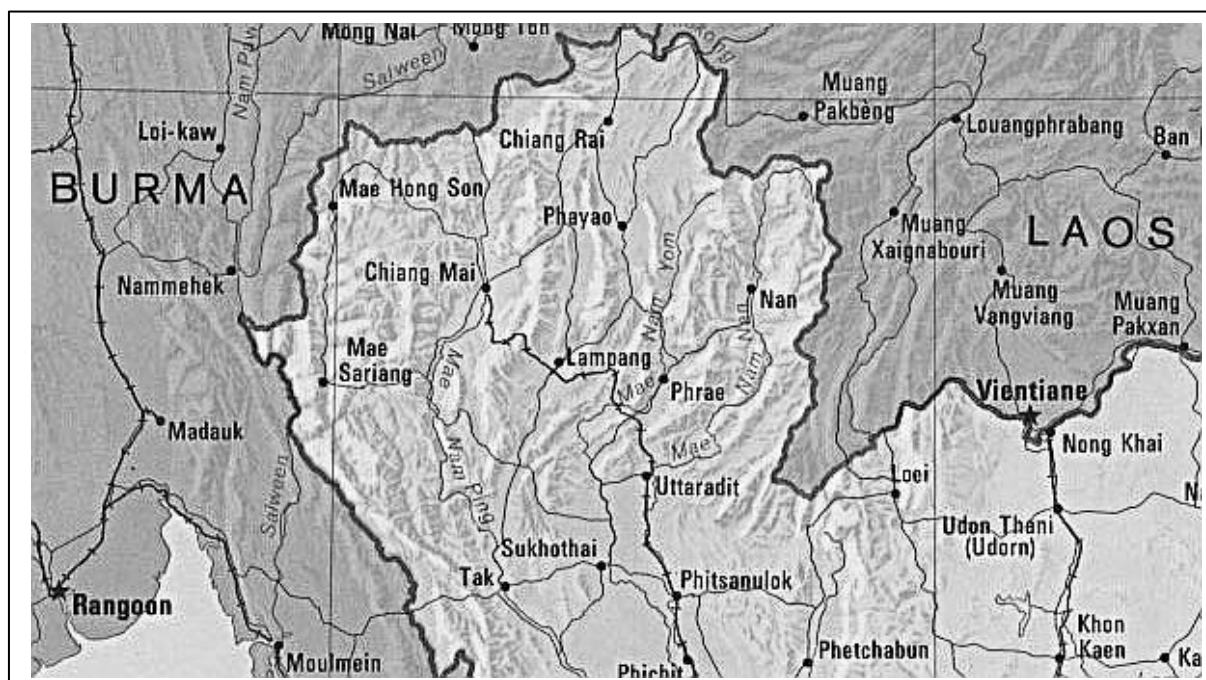
and the USA fought two “Opium Wars” (1839-1842 and 1856) against China to market it in the name of free trade, was suddenly declared an evil threat to Europe 100 years later as it came back as a drug (BROSZAT 1992, 24). Thailand had also been forced by the USA to allow opium imports after the second Opium War.

**Photo 1-1: The root of highland development (*Papaver somniferum*)**

*Photo only available in hard copy*

**1.1.1 The mountainous north and natural resource use**

The north of Thailand is composed of 18 provinces and covers an area of 169,644 km<sup>2</sup> or 33% of the country. It is bordered by Laos to the east and Burma to the west (Figure 1-1). The north lies between latitudes 15°N and 21.5°N and longitudes 97.3°E and 102°E. The Lower North includes alluvial plains and terraces, while the Upper North is more extreme and includes higher terraces, hills and mountains (Doi Inthanon is the highest peak at 2,590 m).

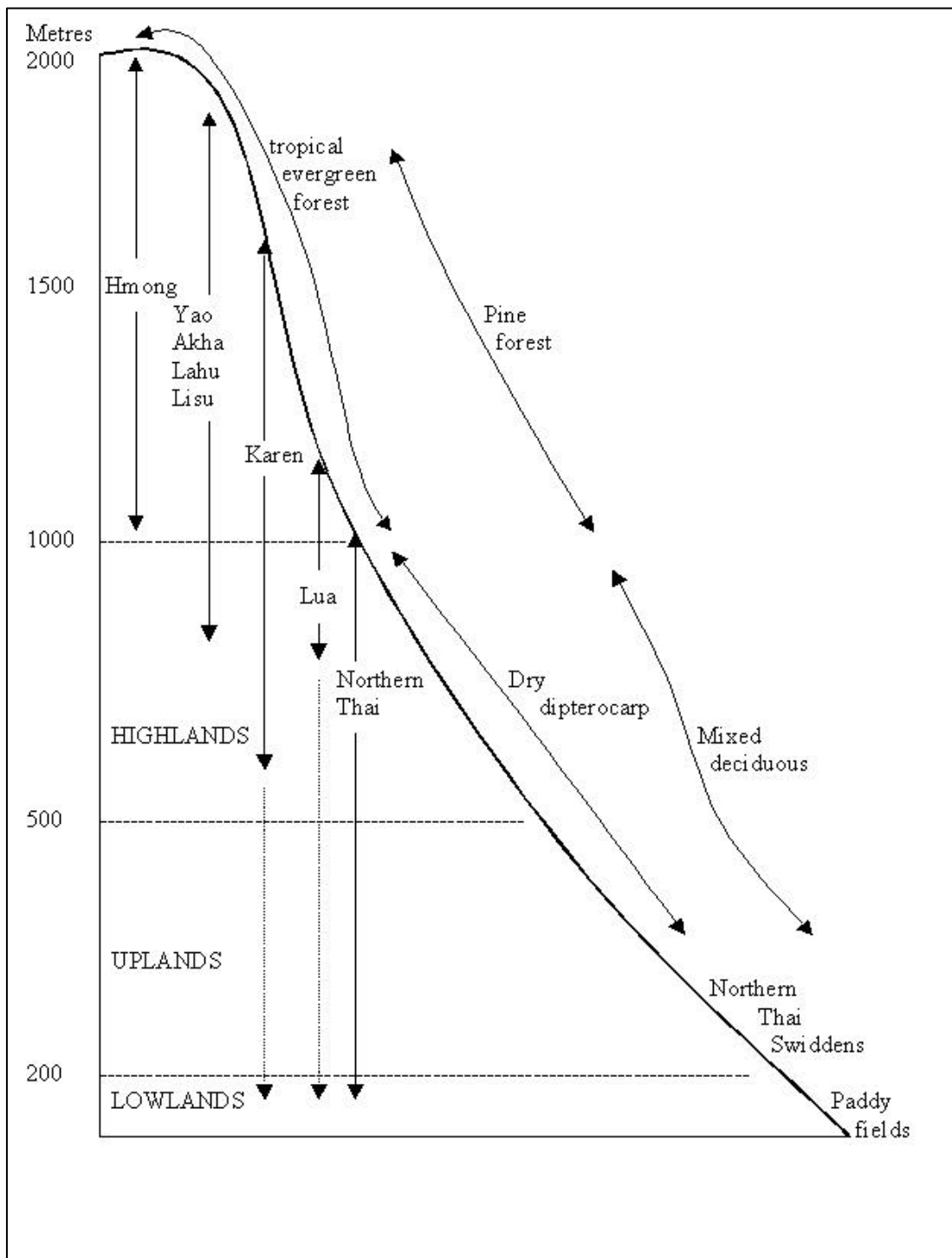
**Figure 1-1: The mountainous north of Thailand**

The area is divided into three major land forms (BUDDEE 1985,19):

- **Lowlands**; fertile alluvial areas up to 200 m elevation with finely textured, poorly or slowly permeable soils (Orthic Acrisols) and medium textured, moderate to well-drained soils.
- **Uplands**; older alluvial deposits in terraces up to 500 m elevation with podzolic soils (Orthic Acrisols) and loamy red latosols (Dystric Nitosols), relatively infertile with organic matter levels below 2%, a low base saturation and usually acid with a pH of 5.0-6.5.
- **Highlands**; ranging from 500 to 2,500 m altitude and consisting of flat plateaux to steep mountains with loams overlaying clays. Highland soils cover about 80% of the north and are extremely complex and diverse (hence often referred to as “*Slope Complex*”), moderately fertile (organic matter 3.5-5%), acidic (pH 5.3-5.6) and tend to be phosphorus and sulphur deficient. The rock types include limestone, shale/schist, granite and sandstone.

The mountains of Thailand were populated from the lowlands upwards. The earliest settlers were northern Thais who occupied the lower areas (upto 1,200 m), and these were followed by a number of Tibeto-Burman mountain peoples moving south from China (Figure 1-2). Thailand has regularly experienced migration from ethnic minorities over time, with most migration occurring since the 2<sup>nd</sup> World War from neighbouring countries at war. Highland peoples have been classified according to ethnicity and six major ethnic groups represent more than 90% of the total hilltribe population: Karen (46.3%), Hmong (17.9%), Lahu (10.5%), Akha (6.9%), Yao (5.8%) and Lisu (4.7%). 90% of the ethnic minorities live in the upper north (ADB 2000,4). The White Karen (subdivided into *Sgaw* and *Pwo*) came up to 300 years ago and settled between 600-1,600 m. They were followed up to 100 years ago by Yao, Akha, Lahu (Black Lahu with subgroups of *Lahu Nyi*, *Lahu Na* and *Lahu Sheleh*, and Yellow Lahu subdivided into *Ban Lan* and *Ba Keo*) and Lisu, who settled at 800-1,800 m. The Hmong (*White* and *Blue*) started to come about 80 years ago and settled at 1,000-2,000 m (KUNSTADTER et al.1978, 9 and GANJANAPAN 1998, 75).

Current population is estimated at 1 million (Table 1-1), but this figure needs to be seen with caution, particularly since by 1988 only 65% of the hilltribes had Thai citizenship, growing to 73% in 1996 (AGUETTANT 1996, 65). The population for Mae Hong Son is over 123,000, and the province has the highest hilltribe ratio nationally with 50%.

**Figure 1-2: Mountain settlement transect** (after KUNSTADTER et al. 1978, 8)

Thailand's forest cover (tree canopy density > 10%) has disappeared rapidly over the last decades. In 1900 about 75% of the land was forested (MCKINNON 1997, 118), decreasing to 60% in 1938 and 53% in 1961 (RFD 1993, 9).

**Table 1-1: Population growth over 40 years (density in people/km<sup>2</sup>)**

	National Population		Hilltribe Population		For Mae Hong Son	
Year	Population	Density	Population	Proportion	Population	Hilltribes
1960 <sup>a</sup>	26.3 mill.	51.3	217,000	0.8%	80,800	No record
1970 <sup>a</sup>	34.4 mill.	67.0	284,000	0.8%	104,160	49,000
1991 <sup>b</sup>	57.0 mill.	111.1	750,000	1.3%	174,777	107,000
1999 <sup>c</sup>	61.7 mill.	120.2	990,000	1.6%	232,483	123,000
Area of Thailand 513,115 km <sup>2</sup>			Mae Hong Son hosts 13% of Thailand's hilltribes			

<sup>a</sup> Source: KUNSTADTER et al. (1978, 27) and YOUNG (1962, 5); <sup>b</sup> Source: RERKASEM and RERKASEM (1994, 6); <sup>c</sup> Source: ADB (2000, 6).

The decline continued, with forest cover reaching 26% in 1991. Today, pessimistic figures place it at as low as 15% (MAXWELL 1997), or 12% in terms of closed forests (tree canopy density > 40%; UNEP 2001, 6). The north fared better with forest cover decreasing from 68% in 1962 to 43% in 1998 (Table 1-2). Forest loss is attributed to the conversion of forest to agricultural land, national security strategies encouraging forest clearance for economic growth in the 1970s, and, to a certain extent, farmers in the forest (SURASWADI et al. 2000, 4). The figures for Mae Hong Son (MHS) province (area 12,681 km<sup>2</sup>) show a more stable situation with 74% forest cover in 1985, declining to 69% in 1998.

The traditional forest farming systems in the highlands are based on shifting cultivation. Glutinous and non-glutinous rice is the major crop, which is supplemented by various subsistence and cash crops such as vegetables, maize, beans, manioc, sorghum, taro, chillies, and herbs and poppy. Extensive livestock production is also practised to earn money (Photo 1-2).

**Table 1-2: Forest cover decrease in the north. 1962 -1998**

Forest type	Northern Thailand (area in km <sup>2</sup> )						MHS
	1962 <sup>a</sup>	%	1982 <sup>b</sup>	%	1998 <sup>b</sup>	%	1998 <sup>b</sup>
Tropical evergreen	17,497	10.3	25,568	15.1	21,161	12.5	684
Mixed deciduous	41,329	24.4	25,006	14.7	32,325	19.1	5,637
Dry dipterocarp	53,144	31.3	34,318	20.2	17,913	10.6	2,225
Scrub	1,913	1.1	846	0.5	2.36	0.0	-
Pine	1,340	0.8	2,018	1.2	1,620	1.0	220
Bamboo	-	-	-	-	34	0.0	-
Total	115,223	67.9	87,756	51.7	73,055	43.1	8,766

Source: <sup>a</sup> RERKASEM and RERKASEM (1994,12); <sup>b</sup> RFD (1999, website)

**Photo 1-2: Wherever possible, paddy fields are established**

*Photo only available in hard copy*



There is a great variety of land use systems and the types of forest farming are classified according to the ratio of cultivation to fallow periods into three types of swidden cultivation (KUNSTADTER et al. 1978,7):

1. **Short cultivation-short fallow** (northern Thai); only supplementary to irrigated wet-rice cultivation in transitional zones between valley and hill lands at elevations between 300-600 metres.
2. **Short cultivation-long fallow** (Karen); Rotational swiddening (Photo 1-3) on sloping land in addition to wet-rice cultivation on terraced fields at elevations of 700-1,600 m, no opium cultivation.
3. **Long cultivation-very long fallow** (Hmong, Yao, Akha, Lahu and Lisu); Pioneer swiddening on steep slopes and opium cultivation as a cash crop at elevations between 800-2,000 m.

**Photo 1-3: Emergence of highland rice on Karen swidden fields**

*Photo only available in hard copy*

A short comparison between rotational and pioneer swiddening reveals the differences with regards to soil cultivation and forest fallow (Table 1-3).

**Table 1-3: Traditional pioneer and rotational swiddening systems**

<b>Pioneer Swiddening</b>	<b>Rotational Swiddening</b>
Altitude 800-2,000 m; limestone soils; practised by Hmong, Yao, Akha, Lahu, Lisu.	Altitude 700-1,600 m; red clay or lateritic soils; practised by Karen as well as Lua.
After burning, a field is cultivated for 4-5 years until soil fertility declines or secondary growth becomes unmanageable. Farmers move on to look for new areas and grass fields are abandoned.	After burning, an area is cultivated for 1 year only and left to fallow for 6-15 years to rejuvenate before farmers return: a cyclical pattern ensuring rich bio-diversity.
Trees are cut and uprooted deep hoe cultivation and clean weeding tree re-growth not possible and fields covered by <i>Imperata</i> .	Trees are cut at breast height, but not uprooted, to allow re-growth, mulching, fodder and seed production; no hoeing.
Rice only is grown in the rainy season followed by opium; crop rotation.	Mixed cropping of rice with vegetables and cash crops, but no opium cultivation.
Very scattered fields; when abandoning an area the whole village moves to new place.	Joint cultivation of larger field clusters and permanent settlement in one area.

Recent studies have found that both rotational and pioneer shifting cultivation have now largely disappeared because most farmers tend to use very short rotations with one- or two-year fallows (RERKASEM and RERKASEM 1994, 20; GANJANAPAN 1998, 75), so that nowadays most systems resemble that of the northern Thais. This applies particularly to the middle zone (600-1,500 m altitude), which is mainly inhabited by Karen. Over the last two decades, this zone

has experienced a population increase as a result of a migratory flow away from the high zone due to government resettlement programmes of hilltribes as well as from Thais from the lowlands. The competition for land is such that it is dubbed the “*Middle Zone Crisis*” (TAN-KIM-YONG 1993, 73). Impacts on traditional land use include diversification and spatial variation in land use, to the point that shifting cultivation in the north is characterised as “*degraded*” (SOMBATPANIT et al. 1993, 310; SCHMIDT-VOGT 1998, 135; RENAUD et al. 1998, 345).

### 1.1.2 Responses to problems of shifting cultivation

With the onset of highland development in the late 1970s, northern Thailand was divided into spheres of influence between different donor-assisted development projects. The projects were co-ordinated by the specially set up Office of the Narcotics Control Board (ONCB), which shows the emphasis on drug control, with other government departments acting as implementing agencies under ONCB supervision. Most projects were phased out by 1998 (DIRKSEN 1997, 333). The TG-HDP was the longest running Regional Rural Development project (RRD, 1981-1998), with a multi-sectoral approach that included infrastructure, health and education, community development, drug abuse control, and agriculture/social forestry to which this research project was attached to (ANONYMOUS 1998a, 4). Like the entire project, the agricultural/forestry component can roughly be categorised into three phases; namely the initial crop replacement, then soil and water conservation, and finally community based natural resource management.

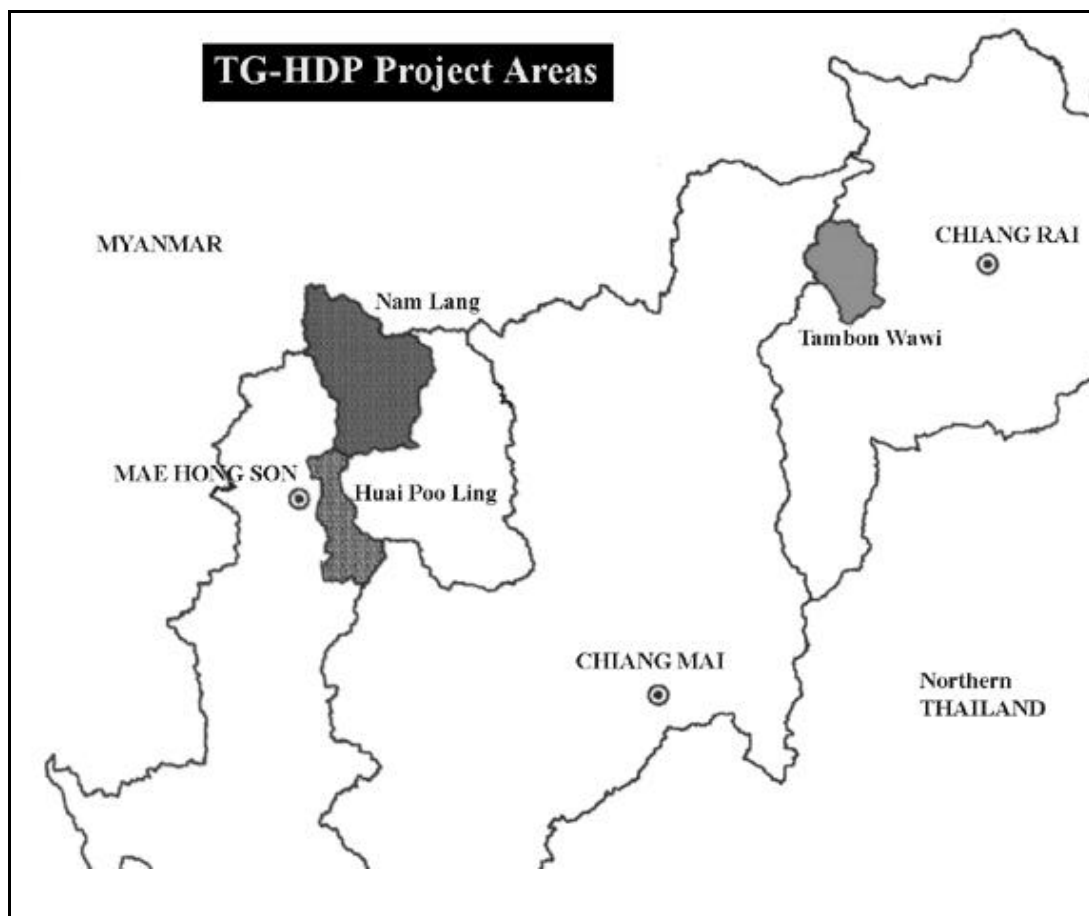
The three TG-HDP project sites that started in 1981 were (Figure 1-3):

- **Tambon** (sub-district) **Wawi** in Chiang Rai Province; the first area to be selected in 1981, which ended in 1994.
- **Nam Lang** in Mae Hong Son Province; the second project area started in 1983, and was initially named after the watershed. In 1996 it was up graded to

district status with the name Pang Ma Pha.

- **Tambon Huai Poo Ling** in Mae Hong Son Province; the third project area which started in 1990.

**Figure 1-3: TG-HDP Project areas in northern Thailand**



After it was realised that it is not so easy to replace shifting cultivation with other crops (ENTERS 1992 and 1996; SALZER 1993), a concept of Sustainable Farming Systems (SFS) was introduced in 1990. This combined optional soil and water conservation measures with perennial and annual cash crops, livestock production and small-scale irrigation. The approach evolved thereby from delivering a package to offering a basket of options (ANONYMOUS 1998b, 9). An impact survey stressed the need for more interaction between extension workers and villagers (BOURNE 1992, 50). The SFS approach was more suited to gradual diversification and the integration of local technologies (Photo 1-4).

**Photo 1-4: Hillside pond for irrigation built by the interpreter**

*Photo only available in hard copy*

By then the positive effects of the UN-Sam Mun Highland Development Project (1987-1994) with its Participatory Land Use Planning (PLP) approach (TAN-KIM-YONG 1993) were exerting their influences on the TG-HDP. In 1989, a similar approach was argued for: *“Watershed management strategies must be built on highland farmers’ existing motivations for sustaining their highland environments through increasing the value, renewability, security, manageability and equity of resources”* (MOHNS 1989, 42).

The UN project was closely linked to the Royal Forest Department (RFD), interestingly the only donor assisted project to do so, and this encouraged the hope that previously protective forest policies were shifting towards more participation. The TG-HDP also expanded to include a shift towards natural resource management with the participation of hilltribes with the onset of the **Community Based Land Use Planning and Local Watershed Management** (CLM). This was initiated in 3 villages in 1990 and has now spread to 30 villages in Mae Hong Son province. The aim was an improved use of land, water and

forests, a rehabilitation of watershed catchment areas and an intensified agricultural production. The TG-HDP defined the objective in the CLM guidelines as (BORSY and v. ECKERT, 1995, 3):

*“The CLM approach should be seen as integrated in the whole process of development, with the focus on people organisation and self-reliance. Sustainability can only be achieved by the land user, and a project, organisation or implementing agency can only facilitate the process”.*

Three-dimensional topographic models became the key visualisation tool, in order to demarcate highland areas under shifting cultivation, permanent cultivation areas, community forest areas for use and conservation forest areas for environmental protection. “*Outer user boundaries*” were demarcated beyond which no activities are permitted, and these are in turn used as village boundaries when the village is officially registered with the Department of Local Administration (DOLA). By mapping the areas on land use maps to a scale of 1:8,000 and displaying this information on three-dimensional land use models made of cardboard or polystyrene, it was possible to measure areas and display land use to outsiders at the same time. This could then be used for discussions on the increase in the size of conservation areas and could demonstrate to Government authorities that villagers can manage and protect forests themselves. The whole approach was meant to operate via Land Use Planning Teams (LUPT) from various implementing agencies, although, as was admitted later, this was a slightly idealised conception (v. ECKERT 1993, 26). There are doubts to what extent the CLM approach was genuinely participatory or whether it was a modification of extension efforts to replace shifting cultivation with permanent farming and to increase reforestation areas. The TG-HDP thereby had the role of a mediator between hilltribes and government agencies.

Reviews of the CLM approach (BORSY and v. ECKERT 1995; ANONYMOUS 1998b) pointed out problems connected with the reluctance of farmers to adopt it and difficulties encountered by the LUPTs. Villagers were seeking to attain lands use rights. They opposed the outer user boundary and felt that insufficient attention was being paid to their priorities, while the LUPT operation was hindered by top-down attitudes of officials and the absence of RFD staff. This was attributed to the inappropriate watershed classification coupled with an insecurity of land use rights and perceived as not conducive to LUPT – community interaction (ANONYMOUS 1998b, vol.1, 33). An additional factor weakening participatory land use planning was the government policy of village relocation out of protected forest areas, and the TG-HDP warned of its consequences (ANONYMOUS 1994). Nevertheless, the inhibiting effects of a controversial policy framework were not taken seriously enough, for there were two national Master Plans for Highland Development with differing priorities among government agencies themselves, without a unified approach towards hilltribes (RTG 1997). The administrative gap between the district and sub-district is crucial here, and the fact that the RFD continues to have a protective mandate for much of the highlands.

In the final phase (1995-1998), the TG-HDP moved away from land use planning based solely on land capability and watershed classification to “*Area Approaches*”, focusing on the aggregation of land use information at Tambon level. The project also supported the informal Pang Ma Pha Hilltribe Network Organisation (Photo 1-5) that emerged from attempts to resolve conflicts between three neighbouring villages over the collection and sale of forest products in 1996 (JANTAKAD 1998, vol.2, 54).

**Photo 1-5: Tambon Tham Lod Secretary showing land use to visitors**

*Photo only available in hard copy*

The final assessment of CLM (JANTAKAD and CARSON 1998, 8) stated that:

- *“Rules and regulations for the management of the natural resources have been created and strictly followed by villagers, especially with regards to the harvesting of forest products and watershed protection;*
- *The Tambon and network situated in the same watershed area or sharing similar resources have improved management capabilities;*
- *The integration of traditions and cultural practices related to natural resource conservation, such as tree ordination, has increased the level of community involvement”.*

The CLM experience has shown that a technical land use planning approach based on land capability in combination with hilltribe priorities can be successful to a certain extent, in spite of the absence of a legal framework. However, unresolved policy issues will endure beyond the lifetime of a project.



## 1.2 Problem situation

The northern highlands are a prime example of a controversial situation arising when a centralised government with conflicting priorities of forest preservation and integration of ethnic minorities extends its control to remote areas, thus clashing with previously autonomous shifting cultivation. On the government side, after an initial focus on the elimination of opium cultivation and national security, the focus has shifted to the restoration of forest cover and awarding limited permanent land use rights, with a new emphasis on the registration of hilltribe villages. Development was driven by the belief that shifting cultivation automatically leads to land degradation, but this assumption should be viewed with caution (FORSYTH 1996, 379). Hilltribes are looking for land security and food sufficiency to first meet their livelihood needs.

The proliferation of policies and development projects has led to a situation whereby hilltribes are caught between three divergent policies regarding forest conservation, village settlement and agriculture:

- The restoration of forest cover to 25% conservation and 15% production forest, enforced by the watershed classification that makes most highland areas off-limits (AMORNSANGUANSIN 1992, 42), under the mandate of the Royal Forest Department (RFD), to the point that even hilltribe resettlement by force was considered (ARBHABHIRAMA et al. 1987, 80).
- The registration of hilltribe villages with boundaries by the Department of Local Administration (DOLA) under the Ministry of Interior, classified by population and long-term residence, progressing from *satellite village* with no official status to *key village* with recognized village leaders (AGUETTANT 1996, 58), and the acquisition of Thai nationality.

- The classification of highland communities according to permanent agricultural potential carried out by the Department of Land Development (DLD 1994), though without co-ordination with the RFD regarding the watershed classification and without considering hilltribe land classifications (RTG 1997).

The problem has thus evolved from the mere application of forest protection laws and planning for agricultural intensification to a multidimensional one calling for mediation and conflict resolution in order to overcome two sets of congruent dichotomies:

1. Forest protection and agricultural sustainability;
2. Centralised administration control and social integration.

The problem complexes in the northern highlands can be subdivided into:

- **Environmental problems:** land degradation, loss of biodiversity, erosion, fire, logging, deforestation;
- **Agricultural/livelihood problems:** food shortages, poor diet, little access to markets, declining yields;
- **Policy/institutional problems;** no land security in the highlands, no recognised community forestry, contradictory development mandates.

The problem situation is exemplified by a long conflict in Chom Thong district of Chiang Mai over water and land between lowland Thais and highland Karen as well as Hmong in the Doi Inthanon National Park since the 1980s. Lowlanders have repeatedly closed access roads and set up roadblocks to force relocation of the hilltribes, whom they accuse of water overuse. In August 2000, they even raided lychee orchards and set fire to houses, and it was lucky that no one was killed. The conflict is serious enough to have been dubbed the *Chom Thong Water Wars* (RATNER, 2000, 6).

### 1.3 The state of the art in land use planning

A historical overview is given by AMLER (1992, 23), who argues that a big step forward was based on a human induced disaster: massive erosion called “*the Great Dustbowl*” that struck the south-western states of the USA in the 1930s as a result of rapid conversion of grassland to farmland for wheat production. As a consequence, soil and climatic conditions of an area were taken more seriously and this led to the first Land Capability Classification.

Population increases bring conflicts of interest and greater demands on the land, so that the need arises for joint planning. The time of continuous expansion and increasing resource use has reached its limits, and it is time to involve the local land users. Closely linked is the concept of “*sustainability*”, particularly in the light of unprecedented rapid expansion of world population in the last century from 1.6 Billion in 1900 to now over 6 Billion. Agenda 21 defines “*Sustainable Development*” as:

*“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”* (see Website).

Land Use Planning (LUP) has thus become a combination of physical land evaluation, spatial planning, economic potentials and most recently the participation of land users (FAO 1993). To spread the concept among its development projects, GTZ has produced guidelines specifically targeted towards technical co-operation which define it as follows (GTZ 1995, 5):

*“Land Use Planning in technical co-operation is an iterative process based on the dialogue between all of the actors involved. Its objectives are the commitment to decisions on the sustainable use of land in rural areas and the initiation and support of the corresponding measures for implementation”.*

This concept brings together different perceptions of planning as a:

- **Rational planning system:** a technical approach of resource valuation and economic profitability to reach an optimum. This top-down approach leaves out social factors and conflicts;
- **Social basis for conflict resolution:** planning becomes a political process in which power structures determine the outcome, as different groups with differing interests come together. Mechanisms of conflict resolution as well as consensus building are the most important factors.

The inclusion of people adds an administrative dimension. As decisions on land use strategy, policies, and operational planning become part of the procedure, these decisions are made at national, district and local levels, with two-way links between different levels (FAO 1993, 6). The various elements of LUP are not removed from the political framework conditions, and these are stumbling blocks if the political will is missing or there is no legalisation or security of user rights. A land use planning approach therefore has to be integrated into a political system. Planning approaches have become increasingly important and have been examined under seemingly opposed **centralised top-down planning** and **participatory bottom-up planning**, influenced by the gradual orientation to local people since the 1980s (CHAMBERS 1994, 953). Particularly in the Asian context, this has generated a rethinking process among foreign development programmes that led to a workshop in Sri Lanka to exchange experiences (BETKE 1994, 131). The discussion focused on political systems, framework conditions, administration levels, and to what extent participation is a concept pushed by western countries as "*good governance*".

GTZ and FAO both acknowledge local needs, but there are few indications on how this is done in practice, which can be seen by key issues (BETKE 1994, 137):

- **The district as an interface between state and society;** decentralisation is advanced in Asia, yet the district as a turning point for the information flow between the local and higher planning levels has been underrated. In Thailand, this means that the sub-district or Tambon may evolve as the key interface, provided sector agencies can co-ordinate their mandates.
- **Participation of all stakeholders;** vital for conflict resolution and the social compatibility of decisions. It is often not clear who stakeholders are, particularly if they are only temporary stakeholders like shifting cultivators who use certain areas only every few years for agriculture.
- **Informal regulations for land use;** unclear land rights are perceived as a "*killer assumption*" in land use planning, meaning that until land tenure is solved, no planning is possible. In Thailand there have been attempts to plan in the absence of a legal framework for the highlands, in the hope to thereby create "*realities*" that may not be subsequently revoked.

## 2 Research framework

### 2.1 Main objective

The basic approach of this study is that land use planning should be a combination of natural and social science, a concept known as “*Hybrid Research*” (FORSYTH 1998, 113). The research took place within the overall objective of achieving a “*Land Deal*”, in which hilltribes abandon shifting cultivation in forest areas for permanent farming and agroforestry on a smaller area, and in exchange, receive official recognition and extension support. In this context, the iterative nature of land use planning also affected the research approach, which changed from the original technical approach to a modified objective once the local conditions were taken into account. Originally, the main objective was:

**To develop a method to combine the “top-down approach” of land use planning with remote sensing tools with the “bottom-up approach” of full integration and participation of local communities, in order to maintain natural resources and to safeguard sustainable, ecological farming systems.**

In reaction to new developments and policy impacts it was modified to:

**To assess participatory land use planning in the highlands of northern Thailand, with the main focus on the hilltribes as the primary stakeholders and the responsible government agencies as the secondary stakeholders, and with particular emphasis on the agricultural systems of the hilltribes, the policy framework, and on institutional platforms for communication.**

The general research objective was further subdivided into specific issues:

- The reasons for the difficult land use situation in the highlands;
- Description and quantification of the type, amount and management of existing land use in selected villages with representative farming systems;
- Necessary contributions of the different stakeholders for natural resource management and protection strategies to improve land use patterns;
- An analysis of the current process of decentralisation with resulting policy requirements for the implementation of participatory natural resource management at village and sub-district level.

## **2.2 Local conditions that led to a revision of the research plan**

In line with the iterative nature of land use planning, several local realities necessitated a change in the research plan:

- **Guidelines and reality;** The CLM approach during the field research (January 1997 to March 1999) differed from TG-HDP documents. The CLM guidelines state that a participatory approach in Land Use Planning Teams (LUPT) is working (BORSY and v. ECKERT 1995, 4; DIRKSEN 1996, 14). The concept has also been referred to in literature as a structure which is in force and stable (GTZ 1996, 36; BETKE 1994, 134), yet upon arrival it was found that village LUP committees and district LUPTs had ceased to exist. Instead, the TG-HDP staff was working with villagers directly.
- **Formal or informal organisations:** During the process of scaling up land use planning, three neighbouring villages initiated a Hilltribe Network in 1996 (JANTAKAD 1998, vol.2, 54). The network took over functions of the abandoned Land Use Planning Teams (LUPT), but received little support

from government agencies' field staff. Decentralisation with newly forming Tambon Administration Organisations (TAO) could mean an uncertain future for the Hilltribe Network.

- **Data aggregation;** The CLM guidelines proposed that satellite images, aerial photographs, Global Positioning System (GPS) and Geographic Information System (GIS) are used by implementing agencies, which was not the case. Therefore, only existing village maps were digitised in co-operation with Chulalongkorn and Chiang Mai Universities and the Survey Section of the ONCB. In Huai Poo Ling this covered 10 target villages, while in Nam Lang only 3 villages had produced village maps, an indication of other underlying problems.
- **Pending policies:** The CLM guidelines state that the Thai Forestry Sector Master Plan has become policy (BORSY and v. ECKERT 1995, 1), but this is still not the case, a fact that weakens any communal forest management initiatives. The same applies to the Community Forestry Act, which has been debated since 1991, but has still not been passed as a law.

These conditions had quite an impact on the research design. This had initially focused on the conceptual support of an on-going planning process, and then changed to examine incoherent policy and decentralisation much more. The issue of who can use research results after a project closes gained in importance, particularly since the GTZ withdrew from natural resource management in Thailand (perhaps prematurely given the focus on “*good governance*”), with the exception of the Chiang Mai branch of the Sustainable Management of Resources in the Lower Mekong Basin Project (SMRP, ANONYMOUS 1999).



## **2.3 Methodology and overview of the study area**

The research was carried out in three stages: the selection of target villages, the digitisation of land use maps and field surveys.

### **2.3.1 Selection of target villages**

First of all, an introductory phase began in March 1997 to familiarise the author with the TG-HDP structure, activities and objectives (details in the Appendix). Six villages were then selected (Table 2-1) for semi-structured interviews on planning priorities and problems. The interviews were intended to reflect the diversity of situations rather than deliver quantitative data. Interviews were conducted with the help of Lahu and Karen translators. The following selection criteria were used:

1. If possible, villages should overlap with study areas of Thai counterparts and German MSc student;
2. Villages should be located in both TG-HDP project areas to study different swiddening systems;
3. The same administrative level (Tambon; sub-district) should be used for data aggregation and assessment of Administration planning structure;
4. Village areas should overlap protected conservation forests to be able to assess conflicts with the Royal Forest Department (RFD);
5. Inclusion of a village outside the CLM target villages for comparison;
6. Should include diverse systems in relation to rice, using the villagers' differentiation between paddy farmers, mixed cropping and pure highland farmers;
7. Should contain contrast between “*key*” and “*satellite*” villages. Key villages are officially registered with the government, whereas satellite villages do not have village status and depend on the village committee they belong to.

**Table 2-1: Selected villages for detailed land use planning**

	<b>Tambon Pang Ma Pha (population 2,600)</b>				<b>Tambon Huai Poo Ling, population 3,500</b>	
Name	Huai Hea	Cha-Aeu	Pa Charoen	Luk Kao Lam	Huai Tong	Huai Hee
Tribe	Lahu Shel.	Lahu Shel.	Lahu Nyi	Lahu Sheleh	Karen	Karen
Households	44	31	16	62	112	22
Population	200	160	82	251	462	196
Status <sup>1</sup>	Key village 1987, Mu 8	Key village 1996 Mu 11	Satellite of Ya Pa Nae	Key village 1988, Mu 9	Key village 1964, Mu 5	Key village 1983, Mu 8
Age	> 50 years	20 years	11 years	> 10 years	> 100 years	> 170 years
Model	1995	1995	1992, old	1997	1995	1995
Map	1996-97	1996-97	None	1996-97	1995-97	1995-97
Type <sup>2</sup>	3	2	1	1	1	2
Students	None	None	German	Ger.+ 1 Thai	None	2 Thai

1. Upon registration with the Department of Local Administration (DOLA), a village obtains a number, such as Mu 8 for Huai Hea in ascending order by registration date, and a Thai name is given. For example, the village Cha-Aeu (named after its village headman) received the Thai name Bor Krai. Satellite villages like Pa Charoen are only referred to by their Key Village, like Ya Pa Nae.
2. Refers to the First Highland Master Plan (1992-96) that classified villages according to their potential for permanent settlement. Type 1 is permanent and receives most government support, while type 3 may face relocation (see Chapter 3.3).

The individual location of the villages in Tambon Pang Ma Pha (Figure 2-1) and Tambon Huai Poo Ling (Figure 2-2) is shown below and bold underlined.

**Figure 2-1: Map of Pang Ma Pha district (Nam Lang)**

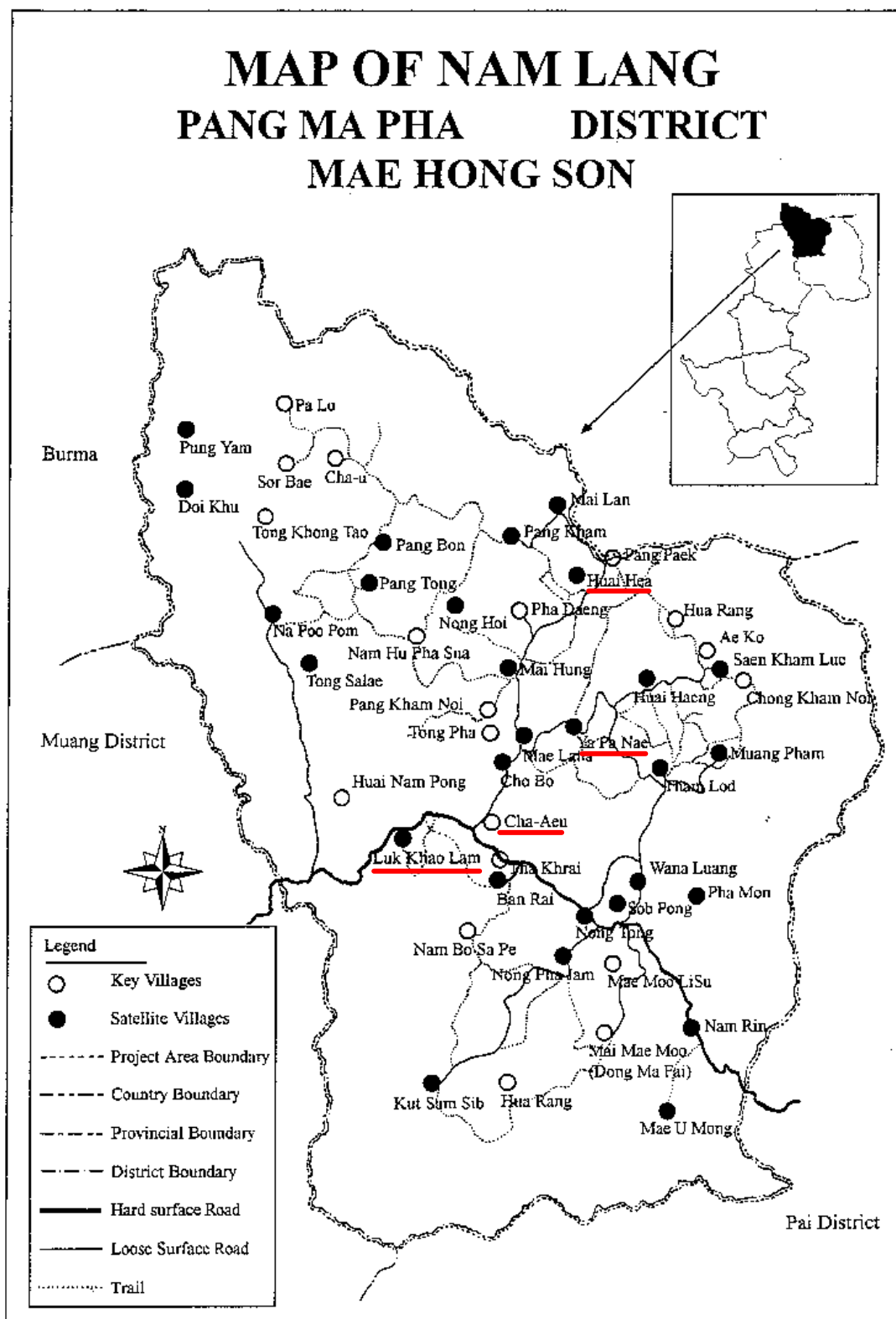
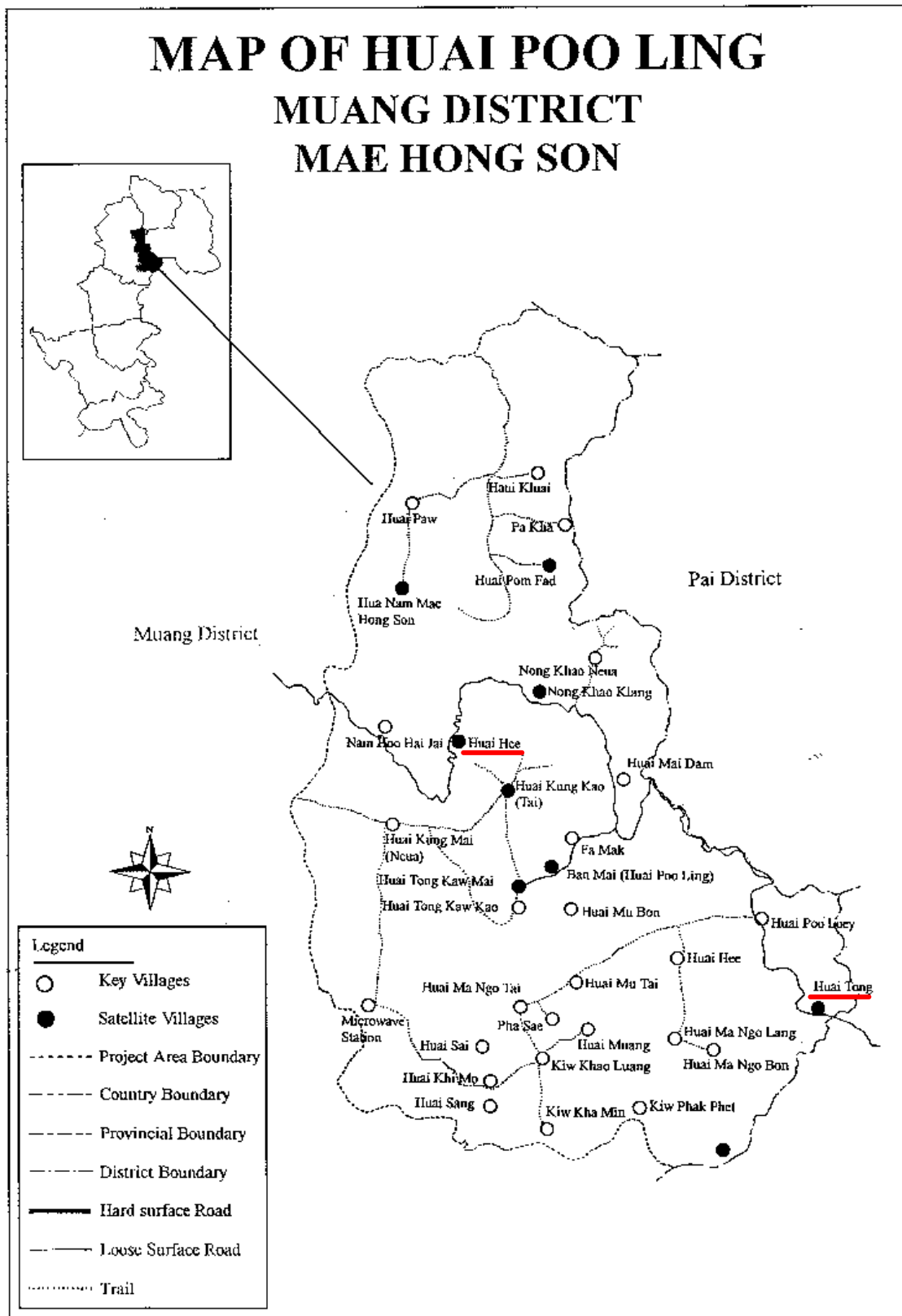


Figure 2-2: Map of Huai Poo Ling sub-district



### 2.3.2 Digitisation of land use maps

The combination of topographic models with GIS is becoming more widespread in Asia (RAMBALDI and CALLOSA-TARR 2000, 19). There are many advantages and also risks involved with GIS, and the concept of a "*Participatory GIS*" has even been labelled an "*Oxymoron*" or a contradiction in terms (ABBOT et al., 1998). This is based on the difficulty of combining participatory approaches with other methodologies. For land use planning, the key issue is the generation of visual information that is both intuitive and useful to the villagers who create it, as well as to the government planning bodies. A particular challenge is the scaling up of information, so as to show local concerns while at the same time being compatible with regional perspectives. The second challenge is the decision-making power arising from the ownership and use of data. In the past, access to data was limited to a few high-level decision makers and mapping thus constituted a merely extractive tool.

The application of GIS in Thailand goes back to a World Bank land policy analysis in 1985 (ONGSOMWANG 1993, 15). GIS was even extended to land use changes in the highlands in order to monitor the effects of population pressure on forest cover and productivity, combining spatial information and socio-economic factors (EKASINGH et al. 1996, 402). These issues have also been considered in more detail for northern Thailand including areas settled by hilltribes (SAIPOTHONG et al., 1999). The extractive aspects have thus already been analysed in case studies, so the challenge remained to include land use classification by hilltribes to take account of their priorities.

Towards the end of 1997, all available hand-drawn village maps were collected for digitisation (10 for Huai Poo Ling and three for Pang Ma Pha), which was done at the ONCB Survey Section as well as at the Department of Geography of

Chiang Mai University. The GIS programme ArcView 3 with baseline data on Mae Hong Son province was obtained from the Department of Urban and Regional Planning of Chulalongkorn University and was presented by Dr. Saengsuan in a workshop at the TG-HDP office in October 1997, with the purpose to integrate the TG-HDP maps into the existing programme. The village maps were digitised using a hand digitiser into the GIS programme ArcInfo and then converted into maps using the map-drawing programme ArcView 3. The roads and streams, as well as the Tambon boundaries for Huai Poo Ling were obtained from the Survey section of the Northern Narcotics Control Office (NNCO) and overlaid.

The same procedure was carried out at Tambon level for Huai Poo Ling, and neighbouring villages often had overlapping boundaries when aggregated. Maps were taken back to villages for modifications or corrections and later distributed in laminated A1 size to villages. Maps were also given to forest officials to facilitate their work in land use monitoring. The data and the GIS software were then given to the Survey Section of NNCO and to the ICRAF office in Chiang Mai that collects this data for the whole north.

### **2.3.3 Field surveys**

From July 1997, field surveys were conducted at village level on the villagers' perception of CLM (Photo 2-1). After the TG-HDP ended in September 1998, village leaders were asked about changes when planning without project support. Topics included resource availability and food sufficiency, land use changes during the last 10 years, land categories and land use based on villagers assessments, village boundaries and conflicts, and village regulations for natural resource management as well as land use.

**Photo 2-1: Interviewing a village elder with a Karen interpreter**

*Photo only available in hard copy*

There were also visits to various government agencies in Bangkok in April 1997 and June 1998 for data collection on policies and aerial photographs at the Royal Survey Department (RSD). In September 1997 and December 1998 it was possible to join opium cultivation monitoring helicopter flights with the Survey Section of the ONCB to see land use from the air.

A very special field trip in preparation for the final TG-HDP workshop on Natural Resource Management in June 1998 was the 5-day Community Leaders Cross Visit Programme funded by the Highland Peoples Programme of UNDP. 17 village representatives from project areas of various development programmes were taken as a group to the project areas in Chiang Mai and Mae Hong Son province to exchange views and problems. During this trip the conflicts of the *Chom Thong Water Wars* (Chapter 1.2) were witnessed directly, as the car convoy, with two village leaders from target villages on board, encountered a roadblock and had difficulties passing it. with two village leaders from target villages on board.

## 2.4 Research partners

The research project was funded by the Tropical Ecological Support Programme (TÖB) for three years (10/1996 – 9/1999) and included two Thai as well as one German MSc projects on related topics. The following institutions were involved:

**German Institution:** Humboldt Universität Berlin, Landwirtschaftlich-Gärtnerische Fakultät, Prof. Dr. U.-J. Nagel, Luisenstr. 53, 10099 Berlin

**Local Institutions:** Thai German Highland Development Programme (TG-HDP), Northern Narcotics Control Office (NNCO), Chiang Mai 50000

Chiang Mai University, Department of Geography and Department of Education, Chiang Mai 50202

1. PhD student Oliver Puginier (Humboldt University): „Community Based Land Use Planning in the Highlands of Northern Thailand as a Means of Natural Resource Management.“
2. MSc student Uwe Klimkeit (Humboldt University): „Socio-economic Study on the Integration of Fruit Trees for a Sustainable Farming System.“
3. MSc student Rattasak Paengchata (Department of Geography, Chiang Mai University): „Application of GIS to Land Use Planning in Highland Areas: Case Study of Bor Krai and Huai Hee Village.“
4. MA student Tawatchai Rattanasorn (Department of Education, Chiang Mai University): „Highland Communities´ Management of Ecotourism“.





### **3 A Policy overview and its institutional context**

*“Government political and Administration policy affecting tribal populations changes continually”* (CHOTICHAIPIBOON 1997, 100).

This statement refers to the fact that the previously autonomous hilltribes were increasingly exposed to the government’s uncertain political position towards them. The tactic of, on the one hand encouraging alternative crops to opium, and on the other using the army to impose sanctions on opium growers, has been dubbed a *"carrot and stick"* policy (DIRKSEN 1997, 330), and is representative of highland policy as a whole.

#### **3.1 Exploitation of natural resources and national security**

Until 1953 forest harvest was perceived to be in the national interest. State-regulated forest exploitation (mainly teak) and widespread logging took place in this *“phase of exploitation”* (JANTAKAD and GILMOUR 1999, 93; PRAGTONG and THOMAS 1990, 10). Protected forest areas were first set aside by the Forestry Act in 1941, which was the first comprehensive forest legislation. This law also regulated the felling of individual tree species and other activities on lands that were not under private ownership. In 1954 the Land Code was passed, under which 50% of the country was declared forest land under the management of the Royal Forest Department (RFD). In 1959 opium cultivation was outlawed and criminalized, the same year as the establishment of the Hilltribe Committee under the Department of Public Welfare (DPW). The RFD was always opposed to swiddening systems as expressed by the Deputy Director General in 1960:

*“Nomadic hilltribes practise shifting cultivation by reckless clearing of forests”* (BANIJBATANA 1962, 5).

In 1960 the government established the National Land Classification Committee to carry out soil surveys and land classification for agriculture, a task that was later continued by the Department of Land Development (DLD), which was established in 1963 (ARBHABHIRAMA et al.1987, 34). At the same time, national planning in five-year cycles was initiated and the 1<sup>st</sup> National Economic and Social Development Plan (NESDP, 1961-1966) encouraged the exploitation of forest resources to attract foreign currency. Parallel to this, natural resources were to be protected with the Wildlife Reserves and Conservation Act of 1960, the National Parks act of 1961 and the National Forest Reserves Act of 1964, and the latter declared 50% of the country to be protected forests (JANTAKAD and GILMOUR 1999, 95). Hilltribes now settled illegally by law and were not considered Thai citizens until the passage of the Nationality Act in 1965, giving hilltribe children the right to Thai citizenship provided that both parents are Thai nationals (AGUETTANT 1996, 59).

### **3.2 Highland projects and watershed classification**

The Agricultural Land Reform Act of 1975 allocated state-held land to agriculturalists for occupation (ARBHABHIRAMA et al. 1987, 32) and the RFD established “*Forest Villages*” in degraded forest areas. For illegal residents in non-watershed areas a similar project called the National Forest Land Allotment Project was initiated (HAFNER and APICHATVULLOP 1990, 337). The objective was to legalize squatters by giving them land use rights, however, it tended to result in lowlanders taking possession of forest areas while hilltribes were evicted, with widespread land sale as more forest land was cleared. The hypocrisy is blatant, given that hilltribes were excluded, although they had lived in forests much longer than Thais. While the Ministry of Interior (MOI) promoted the “*Thaisation*” process, the Ministry of Agriculture remained a threat to hilltribes. In 1976 the Office of the Narcotics Control Board (ONCB) was set up as the

national coordinating body for international projects (CHANDRAPRASERT 1997, 85). Foreign funded projects were implemented by three agencies: the RFD and the DLD of the Ministry of Agriculture and Cooperatives, and the DPW of the Ministry of Interior.

These began with the Thai-Australia Highland Agricultural and Social Development Project (TA-HASD) in 1980 and peaked with a total of 168 agencies from 31 government departments and 49 international donors involved by the late 1980s (GANJANAPAN 1997, 205). This plethora of development that divided northern Thailand into development project areas necessitated coordination, and hence the 5<sup>th</sup> National Economic and Social Development Plan (NESDP 1982-86) included hilltribe issues for the first time. Security concerns, opium reduction, reforestation, reduction of population growth and conversion to good Thai citizens were the main objectives (CHOTICHAIPIBOON 1997, 100). The MOI created a special Committee for the Solution of National Security Problems Involving Hill Tribes and the Cultivation of Narcotic Crops. A Centre for the Coordination of Hilltribe Affairs and Eradication of Narcotic Crops (COHAN) under the Third Army was set up in 1986 to coordinate government agencies (CHANDRAPRASERT 1997, 87).

A national watershed classification was initiated in 1983 that was seen as “*an extension of land use planning for forest areas*” (TANGTHAM 1992, 5). The focus on physical features only, such as slope, elevation, soil, geology and forest cover ignored the hilltribes living in the forests and thus exposed them to the threat of relocation once again. In 1985 the first national forest policy was approved by the Cabinet, which reduced the targeted forest land of 50% to 40%. Of the total land area, 15% were to be conservation forest and 25% production forest, and land with a slope of 35% or more was declared to be forest. Forest target figures were reversed in 1987 with more emphasis placed on conservation (PRAGTONG

1993, 115), but this did not stop deforestation. There have been alternatives to such a classification, like one based on ecological and economic variables (slope, elevation, village location, infrastructure, forest cover) in 1990, and an integrative land capability study (slope, elevation, water availability, village location, forest cover) in 1994 (KNIE and MÖLLER 1999, 146), but these have not been accepted for policy revision.

**Table 3-1: National watershed classification of 1983** (TANGTHAM 1992, 5)

<b>Watershed class</b>	<b>Physical environment</b>	<b>Proposed management</b>
Class 1; subdivided into	High elevation (> 500m), very steep slopes	Protected or conservation forest, headwater source
Class 1A	High elevation and very steep slopes	Permanent forest cover
Class 1B	Similar to 1A, yet partly cleared for agriculture or settlement	Should be reforested or kept as permanent agroforestry
Class 2	High elevation and steep to very steep slopes	Commercial forest, with logging and grazing allowed
Class 3	Uplands (200-500m) with steep slopes	Fruit tree plantation, grazing, agricultural crops
Class 4	Gentle sloping lands	Upland farming, row crops, grazing, fruit trees
Class 5	Gentle slopes, flat areas	Lowland farming, paddy fields and other crops

### **3.3 The First Highland Master Plan and decentralisation**

At the end of 1998, massive landslides killed over 250 people in the southern province of Nakhon Si Thammarat, causing the government to ban all commercial logging in national forests and to consider community forestry (MCKINNON 1997, 123). Unfortunately, a similar tragedy occurred in 2001 in Phetchabun during the

recent floods. The 1<sup>st</sup> Master Plan for Highland Development and Narcotic Crops Control was implemented between 1992 and 1996 under the auspices of the Third Army COHAN administration. The ONCB co-ordinated projects in the 20 provinces in which the plan was implemented, together with the respective Provincial and District Hilltribe Committees (DHCs). The objectives of the plan were to improve the socio-economic situation of the hilltribes, to encourage permanent settlement and community registration and to conserve the environment (RERKASEM and RERKASEM 1994, 26). To this end, the following classification of highland communities was undertaken:

1. **Permanent villages:** large communities of more than 50 households with permanent settlement and no migration for 20 years. Suitable for permanent agriculture and outside watershed class 1 or wildlife areas, with government agencies present and car transport possible;
2. **Potential permanent settlements:** no threat to national security, 20-50 households, no migration for 10 years, permanent houses and suitable for permanent agriculture;
3. **Non-permanent settlements:** communities which do not fulfil the conditions for group 2;
4. **Special:** special community (not further defined).

In order for a village to be legalised, it must be officially registered in the Village Directory of the Department of Local Administration (DOLA, Ministry of Interior), where it obtains a village number and a Thai name. It must also have a village committee chaired by a headman (“*Puu Yai Ban*” in Thai) with two assistants, one in charge of community defence and the other of village management (AGUETTANT 1996, 58). Villages with official status are called “*key*” villages, while smaller settlements are called “*satellite*” villages and must use

the identification of the adjacent “*key*” village for all official matters. When the village population reaches 400, it can be divided and a new “*satellite*” village can be founded. This status can subsequently be upgraded to “*key*” village. In order to qualify for legal status, the village must fulfil the following criteria:

1. The community must not be a threat to national security;
2. The community has several active government agencies operating on a permanent basis in the village. The community has accepted the development initiatives and can actively support them;
3. The village and fields must be in zones suitable for settlement and permanent cultivation as defined by the government. Environmental issues and the management of natural resources must be taken into account;
4. The village has to comply with the Local Administration Act of 1914 and the voluntary self-protection law of 1979;
5. The community has at least 50 households and has not moved in the last 10 years. In addition, the inhabitants have to practice permanent agriculture with soil and water conservation measures (**this implies the definite end to shifting cultivation**).

Simultaneously with this Master Plan, the 7<sup>th</sup> NESDP (1992-1996) declared that 25% of the country should be protected as conservation forest, i.e. all of the nation’s remaining forests (RERKASEM and RERKASEM 1994, 27). At the same time, 45.9% of the country were classified as national forest reserve by the new Watershed Act of 1993, with 27.5% defined as conservation forest (“C”) and 16.2% as economic forest (“E”). A fraction (2.2%) of the total area was allocated for agricultural production (“A”), while the watershed categories of 1983 remained unchanged. Another attempt to reform forest planning policy with

foreign support was the Thai Forest Sector Master Plan (TFSMP). Although the plan stated that “*local communities and individual villagers will have decision-making powers entrusted to them concerning the forest resources they depend on*” (RFD 1993, vol. 2, 3), it remained a utopian objective. The plan was unrealistic and was never implemented since (JANTAKAD and GILMOUR 1999, 98):

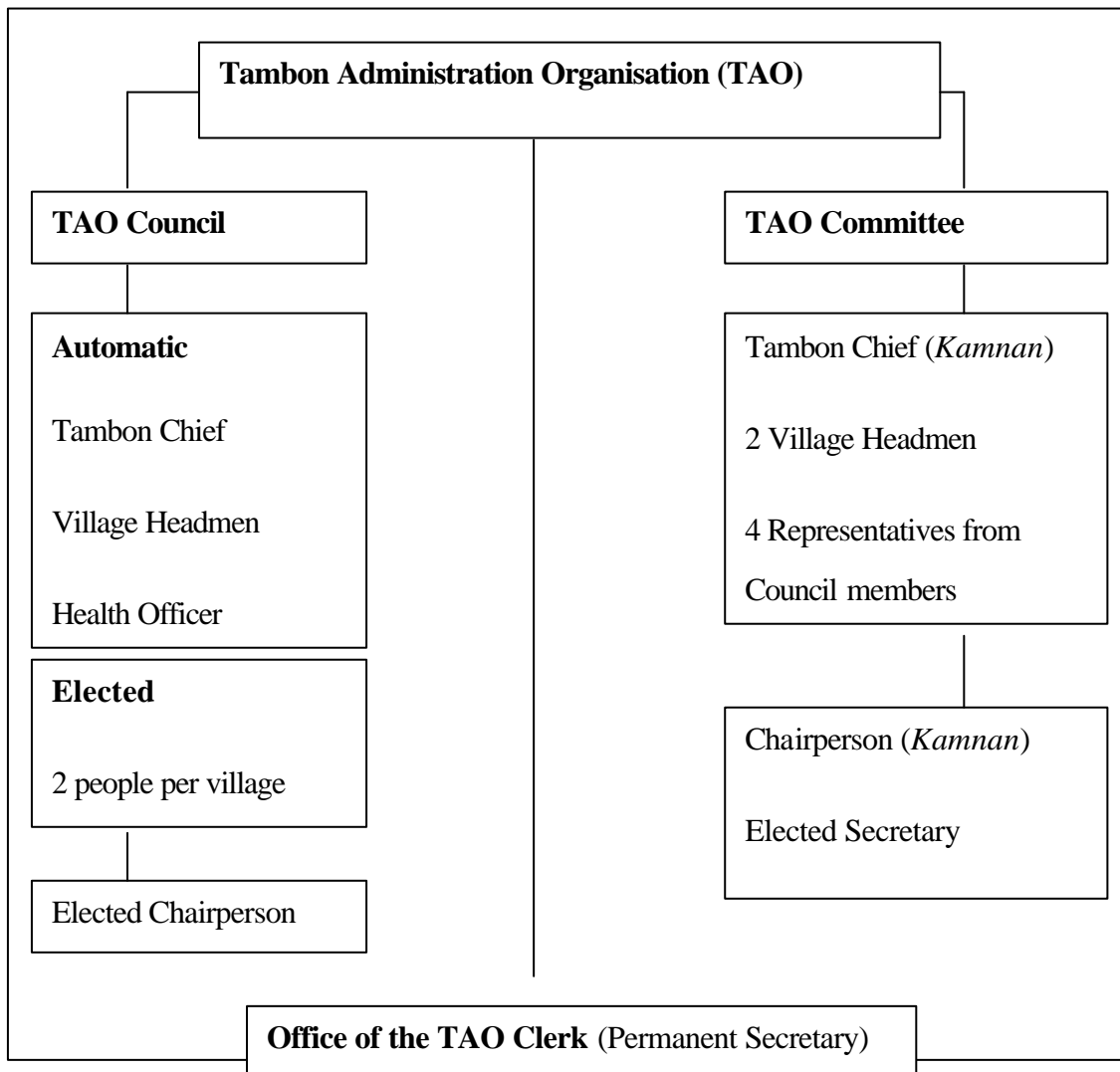
1. The plan did not pay sufficient attention to broader sectoral issues;
2. It was not sufficiently flexible for changing interests in forest management such as the shift from exploitation to conservation;
3. The policy process was too technically driven and lacked effective participation of key stakeholders.

Ever since the RFD started to draft a Community Forestry Act (CFA) in 1991, the issue of forest conservation policy has become very political with a growing gap between policy enforcement towards minorities in the highlands on one hand and favouritism towards business on the other hand. The CFA was passed as a Bill by the Cabinet on the 5<sup>th</sup> of October, 1999, but still has to be passed by Parliament to become law (BANGKOK POST 1999).

The 7<sup>th</sup> NESDP (1992-1996) was a precursor to an administrative reform, called the “*Tambon Council (TC) and Tambon Administration Organisation Act*” (TAO), administered by the MOI and effective since March 1995 (PUNTASEN 1997, 74). The aim is the propagation of democracy at grass-roots level by organising villages into Tambons with mandates for local government functions (NELSON 2000, 6). The TAO is made up of the Tambon Chief (“*Kamnan*”), the village headmen (“*Puu Yai Ban*”), both now elected for 4 years only (previously for life) and the Health Officer (Figure 3-1), who are all automatically members, and by two other elected village members.



**Figure 3-1: Structure of the Tambon Administration Organisation**



**TAO Council:** Governing body and composed of the Tambon Chief (*Kamnan*), all village headmen, the local Health Officer and two elected members from each village. Responsibilities include economic, social and cultural development as well as natural resource management.

**TAO Committee:** Administration section is chaired by the Tambon Chief (*Kamnan*), two selected village leaders and four selected council members.

**Office of the TAO Clerk:** Administration support and records.

When the TAO legislation was approved, 2,760 new TAOs were created as corporate bodies with administrative autonomy. There are now over 6,400 TAOs nationwide and about 500 TCs (to be converted into TAOs). The mandate also extends to natural resources with the following duties (NELSON 2000, 17):

- Advising government agencies on the administration and development of the Tambon in accordance with project planning.
- Carrying out assigned tasks in compliance with local and other laws in relation to implementation by the Tambon on the following issues:
  1. Water supply for consumption and agricultural purposes.
  2. Soil and water conservation.
  3. Maintenance of drains, roads, waterways and other public amenities including garbage and waste removal services.
  4. Protection of natural resources and the environment.
  5. Employment support and promotion for the people.
  6. The development of women, children, youth, and elderly.

The rights of communities over forest and agricultural resources, particularly in official forest reserves, is an issue that the TAO act leaves open. There is no representation of the RFD at all, so it is not clear how the forest sector should relate to TAOs for planning. This means that there is still no platform for connecting bottom-up planning with top-down decision making. Thus, without land security, the fear of eviction remains, which is a stumbling block for labour-intensive and costly long-term soil and water conservation measures as well as for community forestry.

### **3.4 New policies arising during field research**

The 8<sup>th</sup> NESDP (1997-2001) marks a shift away from previous policies of accelerated economic growth at the expense of natural resources, towards sustainability and popular participation. This is also reflected in the chapter on natural resources (NESDB 1997, 109):

*“Local people and community organisations should be urged to play an increasingly active role in the management of natural resources and environments... Furthermore, restraint and greater efficiency should be promoted, so that natural resources can be used to the greatest possible advantage for the economy as a whole, while having the least possible environmental impact.”*

The new 2<sup>nd</sup> Master Plan for Highland Development and Narcotic Crops Control (1997-2001) is characterised by three strategies; the creation of security for highland communities; the management of natural resources with a focus on people and forest living together, economic diversification and land use boundaries; and administrative cooperation between the government and the private sector (RTG 1997, 5). It also stresses the importance of the clear demarcation of a village land use boundary for planning, temporary residence and relocation. Village registration has proceeded and as of 1997 there were a total of 4,374 highland villages, of which 48% were “key” hilltribe villages (ADB 2000, 5). In Mae Hong Son there are 648 villages, of which 268 (44%) are registered as “key” villages. Group classification by DLD has continued, and the lower figures for registered villages are due to earlier data collection (Table 3-2). Highland administration is carried out by 8 Ministries (Interior, Agriculture and Co-operatives, Education, Public Health, Labour and Social Welfare, Defence, Internal Security, and Science, Technology and Environment) and 18 departments. The Central Highland Committee continues to be in charge overall,

and is headed by the Governor at the provincial level and by the District Officer of the MOI at the district level. There is no link with the TAO level, which is a major problem for planning and implementing this controversial legislation.

**Table 3-2: Highland community classification by the DLD (RTG 1997, 3)**

Location	Highland village group type					
	Group 1	Group 2	Group 3	Group 4	No group	Total
MHS	228	78	116	15	150*	587
All North	1,337	1,275	1,285	100	327*	4,297

\* Non-classified villages are targeted for future inclusion in group 3.



## **4 Land use planning results in both target areas**

The entire project area is classified as Watershed Class 1A and has also been classified as conservation forest (no cultivation or settlement permitted) by the Royal Forest Department. Both areas are dominated by mixed deciduous forest, with smaller patches of hill evergreen forest in between. Geologically, the area is characterised by limestone, sandstone and volcanic rocks, which are the parent material for sandy loam, clay loam and clay soils of shallow to intermediate depth. The altitude ranges from 300 to 1,700 m, and the mean annual temperature lies at 24°C, with a maximum at 38°C in both areas, while the minimum in Nam Lang is slightly higher at 14°C than in Huai Poo Ling with 6°C. The annual rainfall averages at 1,300 mm in both areas. Pang Ma Pha district is almost twice as large as Tambon Huai Poo Ling with 600 km<sup>2</sup> compared to 370 km<sup>2</sup>. Nam Lang has experienced a strong population increase between 1983 and 1998, from 6,000 to now 16,000 inhabitants. In terms of population density, this is an increase from 10 persons/km<sup>2</sup> to currently 27 persons/km<sup>2</sup>. The population density in Tambon Huai Poo Ling has increased from 6 persons/km<sup>2</sup> to 10 persons/km<sup>2</sup> between 1990 and 1998, i.e. from 2,500 inhabitants to 3,500. Land use was examined more closely at village level in one of the four Tambon, namely Tambon Pang Ma Pha (with a population of 2,600).

### **4.1 Tambon Pang Ma Pha (Nam Lang)**

#### **4.1.1 Pa Charoen village**

Pa Charoen (class 1, permanent village) is a small (48 ha) *satellite village* of Ya Pa Nae (*key village* No. 5) and was established as a settlement 11 years ago when farmers looked for new land. It now consists of 14 households and 77 people. It is the only village that has converted to permanent farming due to a lack of land

for swiddening (Photo 4-1), and has received TG-HDP support in setting up soil and water conservation structures and in planting fruit trees. Slopes have an incline of between 16-60%. According to a RFD survey undertaken in 1998, villagers have 2-8 fields ranging from 0.5 to 4 ha per household, covering a total area of 38 ha under cultivation.

**Photo 4-1: Helicopter view of Pa Charoen village**

*Photo only available in hard copy*

The village has an old half-destroyed clay model built in 1992 and one which was updated in May 1998, but the cultivation areas are not marked (Photo 4-2). None of the villagers have any land documents. Apart from established firebreaks, the village does not have any natural resource management regulations. When the villagers settled here 11 years ago the village committee divided the land according to family size. There is no paddy cultivation in the village due to unsuitable land, but some limited paddy cultivation is possible on land of the neighbouring villages Mae Lana and Ya Pa Nae. Upland rice is the most important crop, followed by maize for consumption and for pig fodder, and various fruit

tree species. Pa Charoen took part in the TG-HDP promotion of perennial crops (BOURNE and WOOD 1991, 41) that introduced Japanese Apricot (*Prunus armeniaca*), Peach (*Bactris gasipae*), Macadamia Nut (*Macadamia integrifolia*), Persimon (*Diospyros virginiana*), Passion Fruit (*Passiflora grandis*) and Coffee (*Coffea robusta*). The German MSc study found that fruits are still the main cash crops. The income is used to buy rice to supplement (KLIMKEIT 1999, 56) the harvest from paddy cultivation on rented land.

**Photo 4-2: Incomplete land use model built by the TG -HDP in 1998**



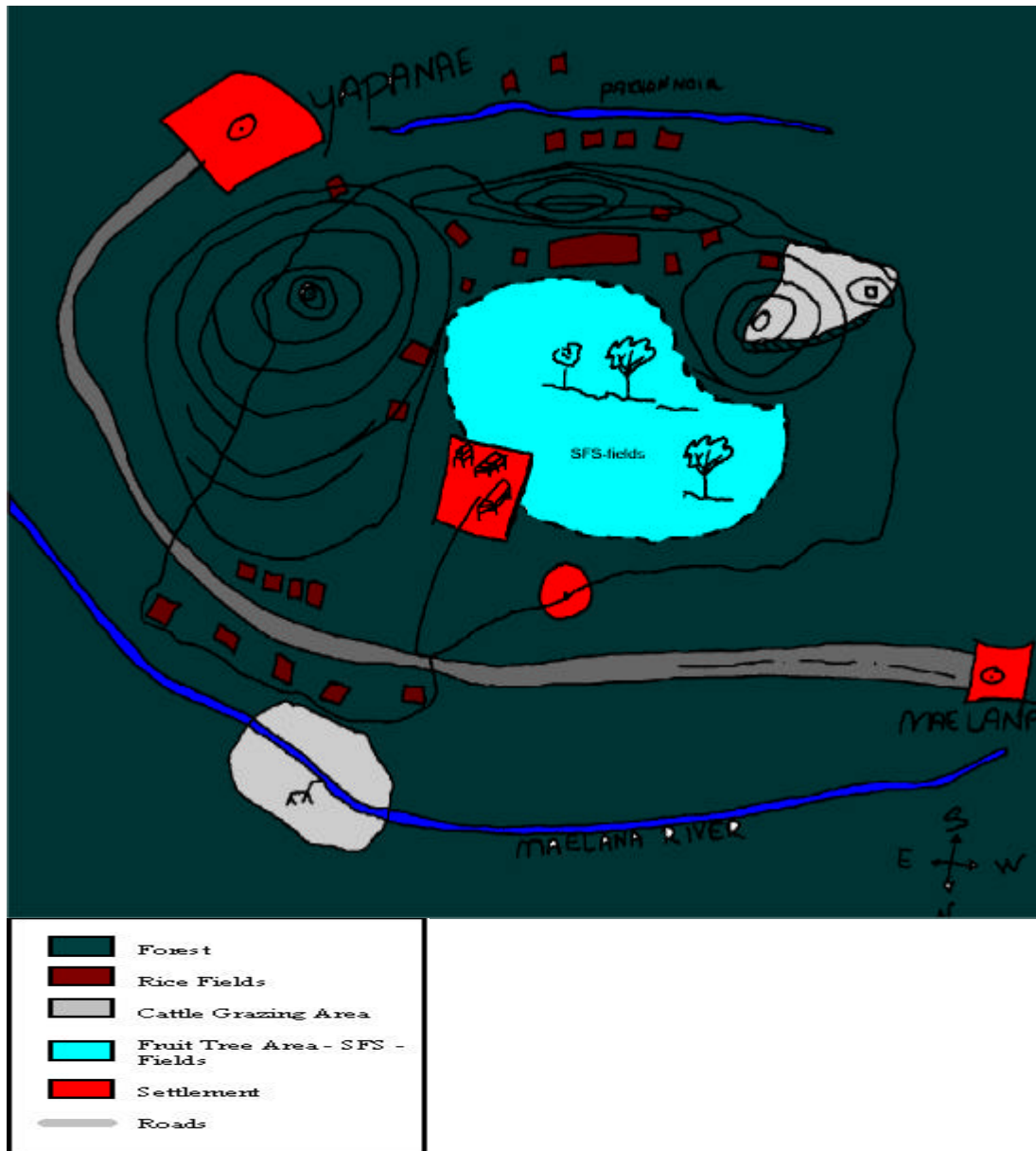
*Photo only available in hard copy*

In spite of an incomplete model, village leaders were able to draw a village land use map centred on upland fields (Figure 4-1). The map shows the influence of the CLM approach, but at the same time villagers would require outside help to display their land use in a way that can be objective, measured and useable for land use planning. As a *satellite village*, Pa Charoen is not a member of the TAO and can only request assistance through the Ya Pa Nae representatives. Perhaps this is also the reason why no natural resource management regulations were developed. As a village with a high level of agricultural intensification, farmers



started to use chemical fertilizer in order to maintain their yields. Even so, the land is insufficient and farmers have to work elsewhere as labourers.

**Figure 4-1: Land use map of Pa Charoen village** (source: KLIMKEIT 1999, 32)



#### 4.1.2 Huai Hea village

The 200 inhabitants of the Lahu Sheleh village Huai Hea (class 3, not a potential permanent settlement according to the DLD) was registered with the DOLA in 1987 as *key village* No. 8, although the Department of Land Development (DLD) still classifies it as class 3, a strange contradiction between different departments

in terms of the official village status. Huai Hea was established as a local settlement 50 years ago, and most settlers originally came from the Sam Mun Mountains in Chiang Dao district of Chiang Mai or from Myanmar. Since the inclusion of Huai Hea in the CLM concept in 1994, farmers have reduced their number of swidden plots which previously exceeded 10, and the fallow periods for upland rice have decreased from 7-8 years to 2-3 years. Land in Myanmar will progressively be given up as land use intensifies and the Burmese Army is less tolerant towards illegal border crossings. The village has been included on the Tambon model, but without the fields in Myanmar that officially do not exist (Photo 4-3).

**Photo 4-3: Huai Hea village on the Tambon model (village No. 8)**



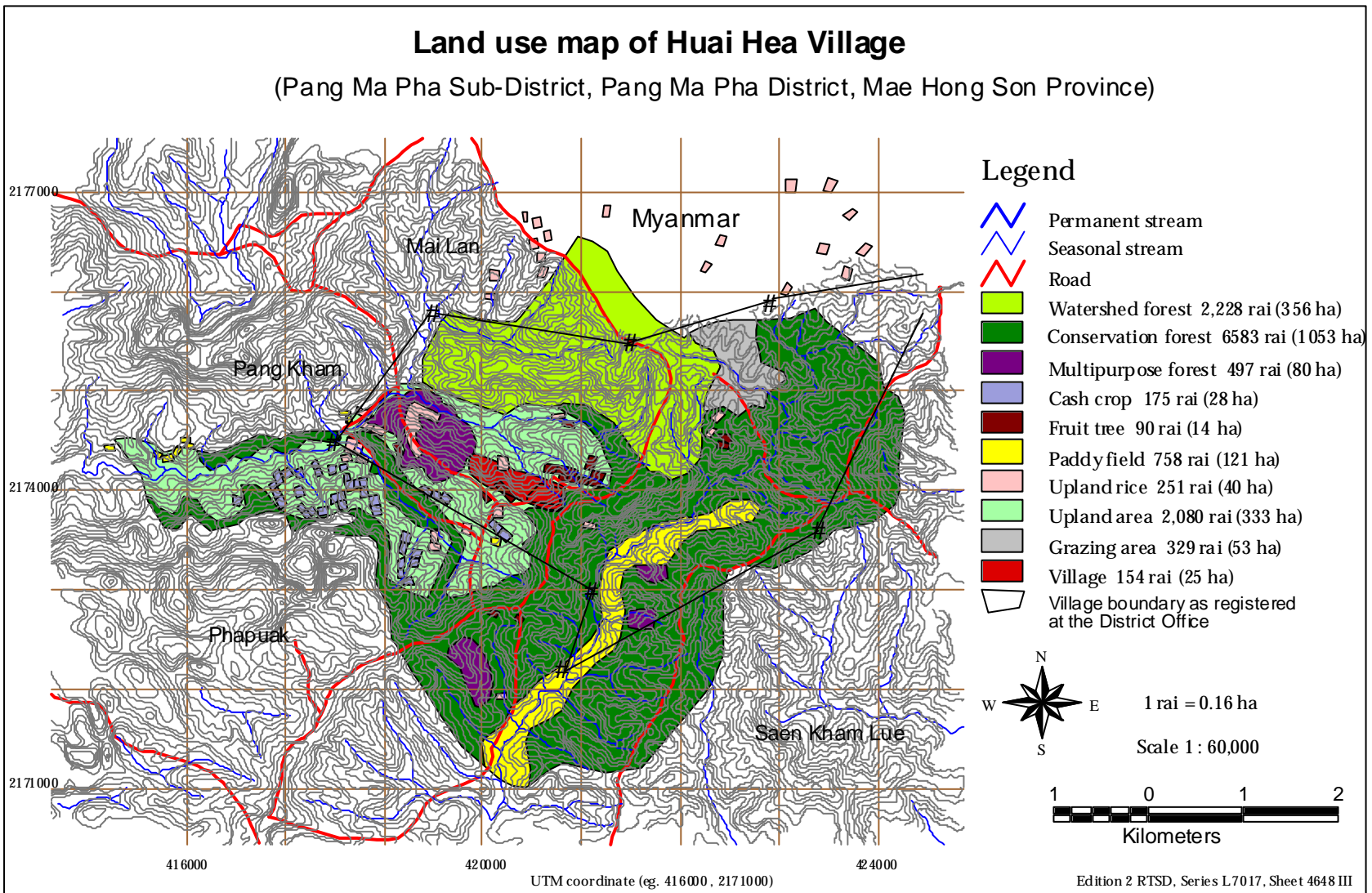
*Photo only available in hard copy*

When interviewed about the use and applications of the model and the map, villagers referred to the TG-HDP that provided it and also mentioned that it has not been updated, partly because they feel that they lack the confidence to do it themselves and partly because their boundaries are not recognized (Figure 4-2). The land conflict with Phapuak village to the west was mentioned, where Huai

Hea lost some upland to the newly established Phapuak when it was officially registered in April 1995 (DOLA 1995). Phapuak villagers originated in Huai Hea and migrated to form a new settlement, and at the time of village registration about 25% of the Huai Hea area was given to the new village and thus lost. The differences between the boundary drawn by villagers themselves and that of the registration document became clear when included on the map and caused some concern among village leaders. Neither the TG-HDP nor the DOLA office had informed Huai Hea of these boundaries and the village headman was grateful to receive a copy of the document, supplemented by the map that displays the DOLA boundaries. On top of that, the other boundaries were not recognized either and land designated as upland farmland has even been confiscated by the Royal Forest Department (RFD), in spite of contrary statements from TG-HDP staff (JANTAKAD 1998, 41). Huai Hea is really in a very unstable situation as to which land can be farmed or used for firewood collection –this is not very conducive to planning or long-term commitments.

The members of the Tambon Administration Organisation (TAO), which has been in existence since 1997, do not normally use maps in meetings, partly because of their limited mapping skills. Several farmers reported confiscation of upland areas by the RFD, which does not recognize the village model, so the fear of losing land persists now that the TG-HDP has left the area and villagers have to deal with authorities directly. As part of the CLM process, the village has even produced land use regulations for communal resource management (Box 4-1). In summary, Huai Hea has come a long way in modifying its land use, in adapting to soil and water conservation, and in regulating resource management, so it is a pity that the efforts of the villagers are still not recognized by government agencies.

Figure 4-2: Land use map of Huai Hea village



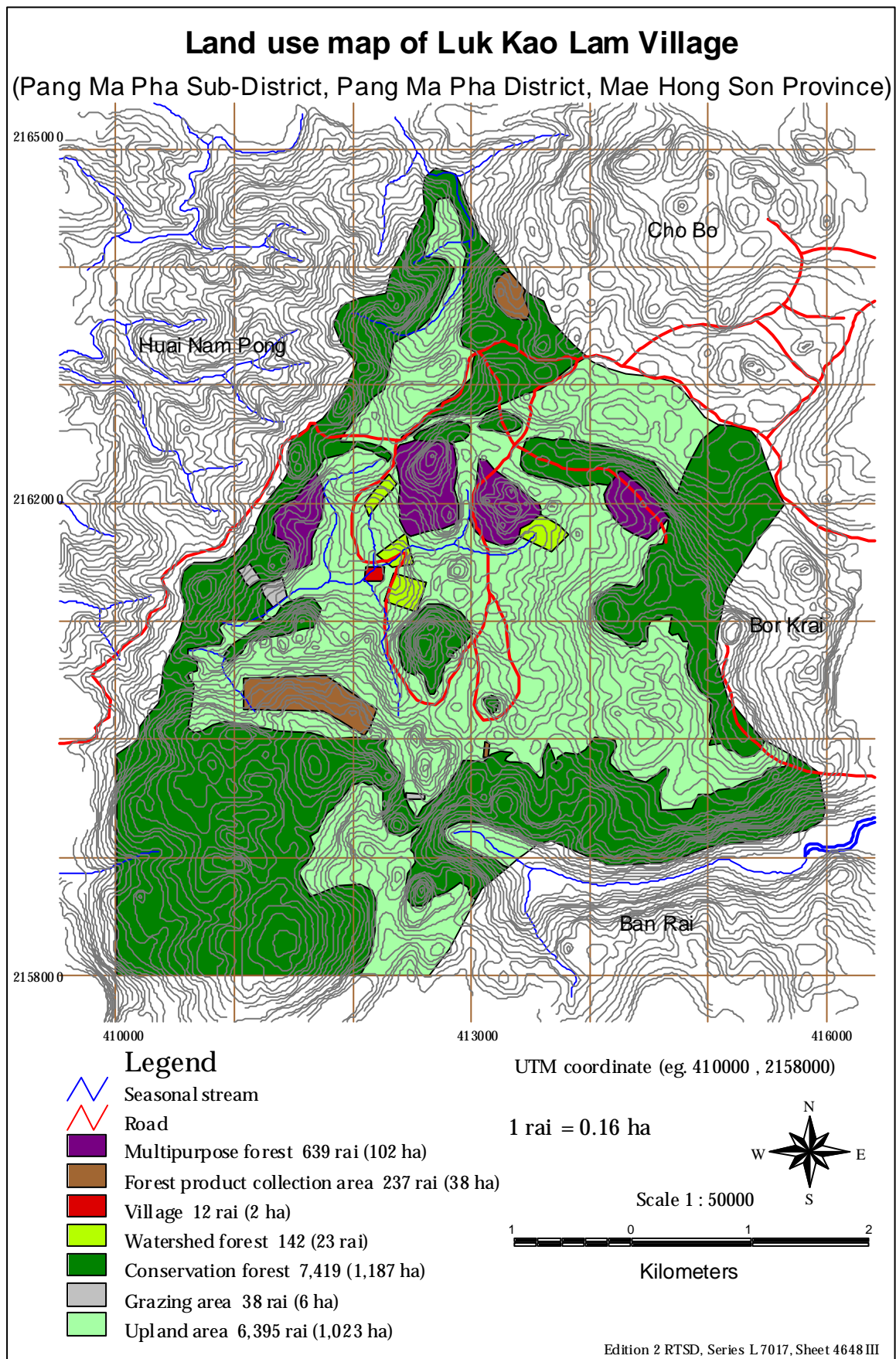
#### **Box 4-1: Huai Hea regulations on land use**

1. Do not cut trees and cultivate the land around the watershed area.
2. Do not cultivate the areas found in the multipurpose forest.
3. Cutting trees for sale is not allowed except for the construction or repair of village housing and fuel/firewood (fine 500 Baht, paid to village committee).
4. For non-villagers who want to use trees in the multipurpose forest, permission must first be secured from the village committee.

#### **4.1.3 Luk Kao Lam village**

Luk Kao Lam (class 1, permanent village) has a population of 251 and originated from the nearby villages Bor Krai and Cho Bo. The present village location was secured in 1988 upon registration (*key village* No. 9). The slopes are steep with inclines of between 16-60% and the geology consists of steep limestone mountains surrounding the village. The village model was first built in 1995. A revised model from 1997 still does not include all fields as seen in the southwestern border (Figure 4-3), which follow a line instead of natural limits, probably due to an underestimation of the extent of the village area. The total area amounts to 2,381 ha, of which 43% are used for agriculture and 57% are forest. In 1998, about 207 ha were cultivated or about 18%, yet in a RFD survey a total of 394 ha was estimated. Upon questioning, farmers replied that this is their strategy towards the RFD in order to keep land, since they expect land confiscation anyway and can thereby secure at least some of the area. Paddy rice cultivation is forbidden, since the village lies within the Pai Wildlife Sanctuary, which is placed under the protective RFD mandate. Therefore, livelihood depends on swidden rice farming which is rotated with maize and red beans, while taro is grown in the low lying areas together with cucumbers, and fruit, bamboo shoots and mushrooms as cash crops.

**Figure 4-3: Land use map of Luk Kao Lam village**





Land use regulations have been formulated for tree cutting in the conservation forest (fines of 500-700 Baht depending on size) and village committee approval is required for felling in the watershed forest. Insecurity persists and villagers say their land use is not recognized by government officials, while the persistent fear of land confiscation is not conducive to planning.

#### **4.1.4 Bor Krai village**

The Lahu Sheleh village of Bor Krai (class 2, a potential permanent settlement according to the DLD) has been inhabited for 20 years and was registered in 1996 as *key village* No. 11 (DOLA 1996). The village has a population of 160 and consists of 31 households. The villagers of Bor Krai migrated to the new location from the original village of Cho Bo to the north in 1978, so initially Bor Krai was a satellite village of Cho Bo and gained full status when it was registered. At the time of registration, some land was taken from Cho Bo and given to Bor Krai, so a similar situation as in Huai Hea exists, in this case from the perspective of the new village. Some villagers still have land in Cho Bo, but for official planning purposes this land is lost as it lies outside the boundary. Bor Krai is also included on the Tambon model (Photo 4-4), whereas the village map based on the village model cut off some land to the east (Figure 4-4), and official boundaries go beyond what the villagers demarcated for themselves. There is no paddy cultivation, not because villagers do not want rice paddies, but because Bor Krai is at the northern tip of the Pai Wildlife Sanctuary, and paddy cultivation is therefore forbidden by the RFD. Under the persistent fear of land confiscation, a land use survey conducted by RFD in 1997 resulted in a figure of 179 ha of upland area used or nearly double the area of 92 ha measured in this study. This was explained by farmers as a strategy of holding on to at least some land as other areas would be taken away in spite of official village registration. This clearly illustrates that villagers do not feel that they have land security and

continue to live in a state of flux, without any realistic aspirations for some form of land title.

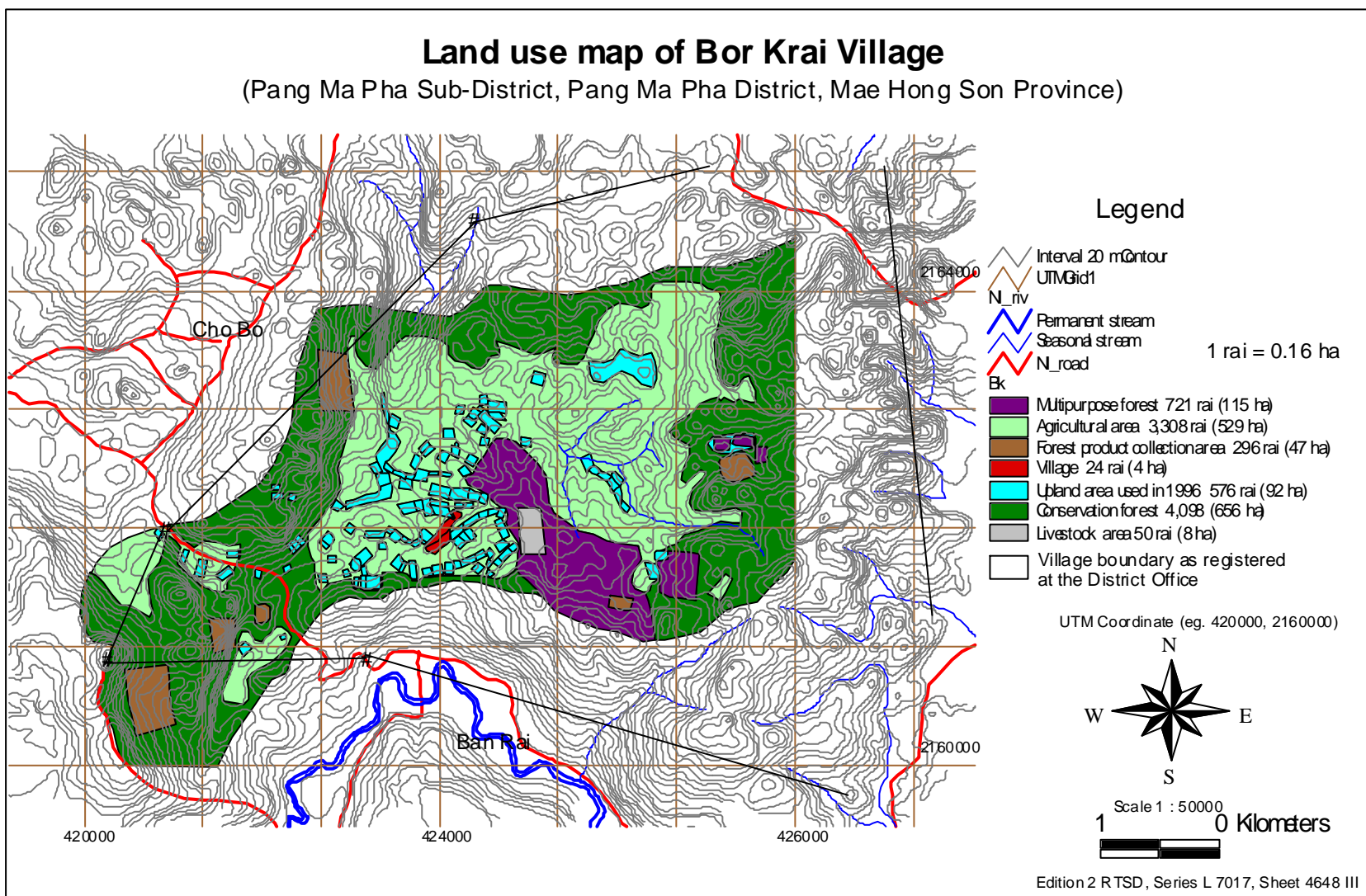
**Photo 4-4: Bor Krai village on the Tambon model (village No. 11)**

*Photo only available in hard copy*

The village also has strict natural resource management rules (500 Baht/tree fine for felling and 500 Baht/animal for hunting in the conservation forest), and displays forest conservation efforts that deserve official recognition. In contrast to Huai Hea (Chapter 4.1.2), it was relatively easy for Bor Krai to agree on a joint boundary with Cho Bo as the village of origin. This is down to the leaders of the adjacent Lahu Sheleh villages of Luk Kao Lam, Bor Krai and Cho Bo, who took their own initiative under the influence of the CLM approach in 1996 to form a group of forest product collectors with regulations mutually agreed upon by all parties. This grass-roots initiative for joint resource management expanded into a more structured Hilltribe Network and has become relevant for decentralisation processes taking place at the next administrative level.



**Figure 4-4: Land use map of Bor Krai village**



#### **4.1.5 Pang Ma Pha Hilltribe Network or TAOs?**

The villagers of Luk Kao Lam, Bor Krai and Cho Bo (all Lahu Sheleh), collect forest products like bamboo shoots, mushrooms and ornamental plants as a source of additional income. A survey revealed that each village has its own distinct collection methods (CHUNTANAPARB et al. 1995, 3). Products were harvested from forest areas that are close together and that overlap in some cases. Some villagers periodically contacted private buyers who came with large trucks to buy the entire village supply, and collection became extremely competitive.

In reaction, the TG-HDP supported a forum for the group of forest collectors, held at Luk Kao Lam village in 1996 with two resource persons from the RFD (JANTAKAD and CARSON 1998, 6). After this event, the villagers became aware of the situation and agreed to develop a management plan for forest product collection. They began to hold negotiations amongst themselves to agree on rules and regulations, guidelines for collecting forest products, and the identification of forest areas in each village where collection could be carried out. News soon spread to other neighbouring villages and their leaders expressed an interest in joining the network, thus broadening the scope of community membership to include land use conflicts, forest encroachment in watershed areas, animal raising and territorial boundaries between villages (an approach that extended to neighbouring Tambon Tham Lod, Photo 4-5). By 1998, 20 villages of all tribes had joined the network.

The enlargement of the network required organisation, so a committee was set up in 1997 under the village leader of Cho Bo (Mr. Jakaisae) and monthly meetings are now held in member villages on a rotational basis. By then the network had expanded to work on four problem areas:

*Photo only available in hard  
copy*

- Natural resource management
- Drug addiction
- Conservation of hilltribe cultures and traditions
- Support for the education and accommodation of students

The acceptance of the network by government authorities has been mixed, and interviewed members repeatedly mentioned the suspicion they faced from the District Office, which has also been

reported by the TG-HDP (WONGCHAN 1998, 108). When examining past

policies of control such a reaction is not surprising. This raises the question to what extent local agencies are willing to support informal initiatives, even if they are in line with the national drive for participation (NESDB 1997, 109).

On the other hand, the network made an impact on the newly forming Tambon Administration Organisations (TAOs) in Pang Ma Pha to the extent that the network was integrated as a sub-committee in the management of natural resources and the environment. In this light the network preceded TAOs in attempts to solve pressing problems and should not be considered as a competition or substitution, since village leaders that are network members are TAO members at the same time (see Chapter 3.3). It remains to be seen whether this double membership continues or if the tide turns in favour of officially recognised organisations. TAOs are still fairly new and are in the process of establishing themselves, although a first 5-year plan has already been formulated

for 1997-2001 for Pang Ma Pha, with proposed annual plans from 1998 onwards.

Issues included in these plans are irrigation for agriculture, water shortage, declining soil fertility, forest destruction, insufficient timber and the absence of land titles affecting all 11 registered key villages in Tambon Pang Ma Pha. Village land use regulations have also been aggregated at Tambon level (Box 4-2). One remaining difference between the Hilltribe Network and TAOs is that the network covers member villages from all four Tambon of Pang Ma Pha district, while TAOs only operate within Tambon boundaries.

**Box 4-2: Natural resource management rules at Tambon level**

1. Cutting trees in the watershed forest is not allowed.
2. The individual responsible must build firebreak protection before burning fields.
3. The village must grant permission prior to felling trees in multipurpose forest.
4. Trees cannot be cut for commercial sale to outsiders, but a Tambon member can seek permission from the village committee to sell to outsiders.
5. The intended area for cultivation must not be extended into the new forest.
6. Materials that contain poisonous substances/bombs are not allowed for fishing.
7. No machines or saws are allowed for tree felling, except with permission from the village committee, and permission is considered in terms of communal use.
8. Punishment: violators shall be arrested and fined 300 Baht for forest encroachment and 300-500 Baht for the use of poison or bombs for fishing. The money will be deposited in the Tambon treasury.

## **4.2 Tambon Huai Poo Ling**

### **4.2.1 Huai Hee village**

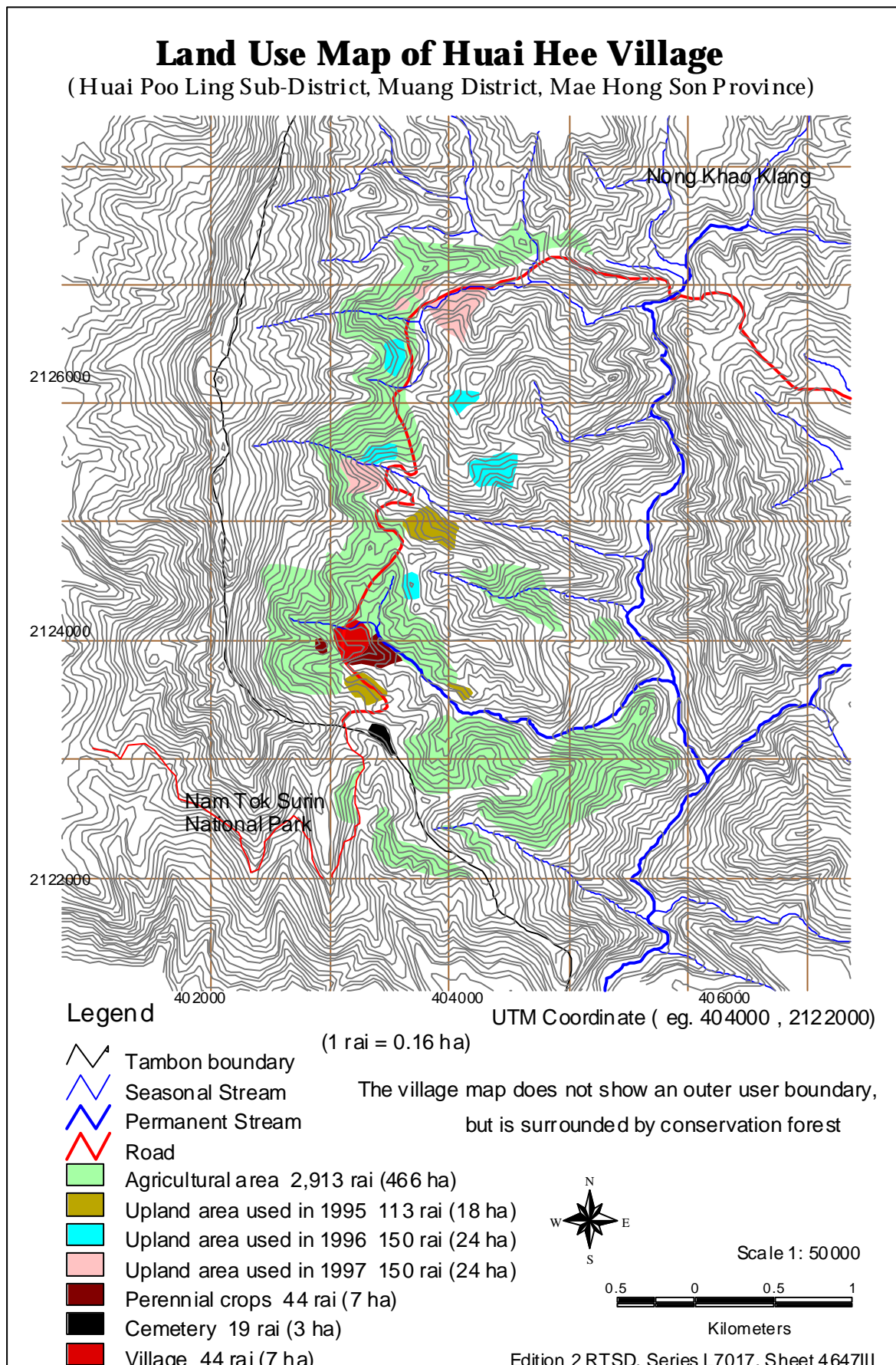
Huai Hee (class 2, a potential permanent settlement) was founded 170 years ago and is now inhabited by 196 Karen (*Sgaw*) and became officially registered as *key*

village (No. 8) in 1983. Huai Hee practises mainly subsistence agriculture of the rotational swiddening type, but here too there is a transition towards permanent agriculture and fallow periods have decreased from 15 to 8 years. Traditionally, the village has 5 locations for upland farming, and villagers cultivate an area together. In the following year some farmers move to a new location, while some stay in the old area to cultivate the remaining land that was not cultivated in the first year. This cycle then repeats itself so that in each location there is a mixture of cultivated and fallow land. Due to the surrounding steep slopes, there is no paddy cultivation and the village has to rely on upland rice for its staple food, which is interplanted with vegetables. Some livestock are reared and perennial crops are also grown. The village is bordered by the Nam Tok Surin National Park to the west and had agricultural area within the national park in the past. Due to pressure from the Royal Forest Department (RFD) this land had to be abandoned. Although the topographic model includes an outer user boundary (Photo 4-6, white line), the village map does not (Figure 4-5), and indicates that this concept is not quite accepted by villagers.

**Photo 4-6: Topographic model of Huai Hee village**



*Photo only available in hard copy*

**Figure 4-5: Land use map of Huai Hee village**

The total village area is 1,700 ha, of which 1,084 ha are conservation forest (64%), while 36% of the land is used for agriculture. Some upland area still lies outside the demarcated agricultural area, an indication that fixed areas are not yet part of the villagers' perception of government land use planning priorities. This is understandable since the use of these tools has not given land security to farmers and they therefore do not feel committed to abiding by these demarcations. Of the total agricultural area of 466 ha, only 5% on average have been used during the last three years. Fruit trees play a minor role with 7 ha under cultivation, as the fruits are only grown for home consumption due to the lack of a market. With shorter fallow periods as a result of gradual intensification, the farmers experience a decrease in rice yields. As for land insecurity, the main fear is land confiscation by the RFD for areas under long fallow periods where trees have grown large. The traditional system is clearly in conflict with the purely protective interests of the RFD, in spite of self-imposed natural resource use rules that show a commitment to conservation (Box 4-3).

In order to boost its income, the village became involved in an ecotourism project in November 1997, which was supported by the Thailand Research Fund and the German Heinrich Böll Foundation, and which was also the topic of a TÖB funded MA thesis (RATTANASORN 1999). When it comes to forest use and agriculture, the abandonment of shifting cultivation and forest farming is in line with government policy, so that ecotourism is one of the few options to secure a livelihood. This was also the reply by village leaders when confronted with this question in an interview on the impact of ecotourism on their lifestyle. The set-up of the ecotourism and financial arrangements after the closure of the TG-HDP has been studied in a critical report (SAHLIN 2000). The whole village has been involved in the project from the beginning, operating a rotation system in which each household acts as host in turn. This also applies to local guides. The village foundation is used for different activities like forest conservation and orchid

replanting, equipment for hosting tourists, like blankets, mosquito nets and mattresses, as well as for travel expenses and training of villagers participating in the project.

**Box 4-3: Natural resource regulations of Huai Hee village**

1. Only villagers may cut timber and they can only use it in the community;
2. Permission to cut timber has to be sought from the village committee;
3. No chainsaws are permitted;
4. Trees cannot be cut in conservation forest or near streams;
5. Anyone who sees community forests on fire must extinguish them;
6. Agricultural areas can only be burnt after a firebreak has been built and permission sought from the village committee;
7. Hunting in conservation forest is prohibited;
8. Fishing with explosives, electric shocks or poison is prohibited;
9. Fines for contravention amount to 100-500 Baht to the village committee.

The most important aspect of the ecotourism project seems to be the newly created communication platform with outsiders, possibly in a more appropriate way than the CLM approach. Through contact with outside agencies, a mutual dialogue has begun. Ecotourism has brought Huai Hee village out of its isolation and into contact with visitors and government. This new situation provides opportunities to improve the livelihood, but also poses the danger of being overrun by outside agencies with their own agendas of short-term material benefits.

**4.2.2 Huai Tong village**

Huai Tong (class 1, permanent village) is an old Karen *key village* (No. 5), which has been settled for over 100 years. Population has grown from 150 in 1964 (year



of registration) to 462 people with 112 households. Farmers still practice rotational swiddening, but paddy fields have become established a long time ago and thus constitute the most important food source, while upland crops supplement the diet. The village boundary was demarcated in 1996 with the arrival of the CLM programme, but the land use model and village map were in a bad condition. The total village area is 1,988 ha, of which 1,345 ha or 67 % are forest, while 644 ha are used for agriculture (33%). Some farmers still have land in the neighbouring Chiang Mai province to the east and will probably lose it once village boundaries are enforced rigorously. The mapped area on the model does not cover the whole village, and a map updating exercise failed due to limited mapping skills (Photo 4-7), so that the CLM approach needs more support from extension agencies.

**Photo 4-7: Incomplete redrawn village boundary**



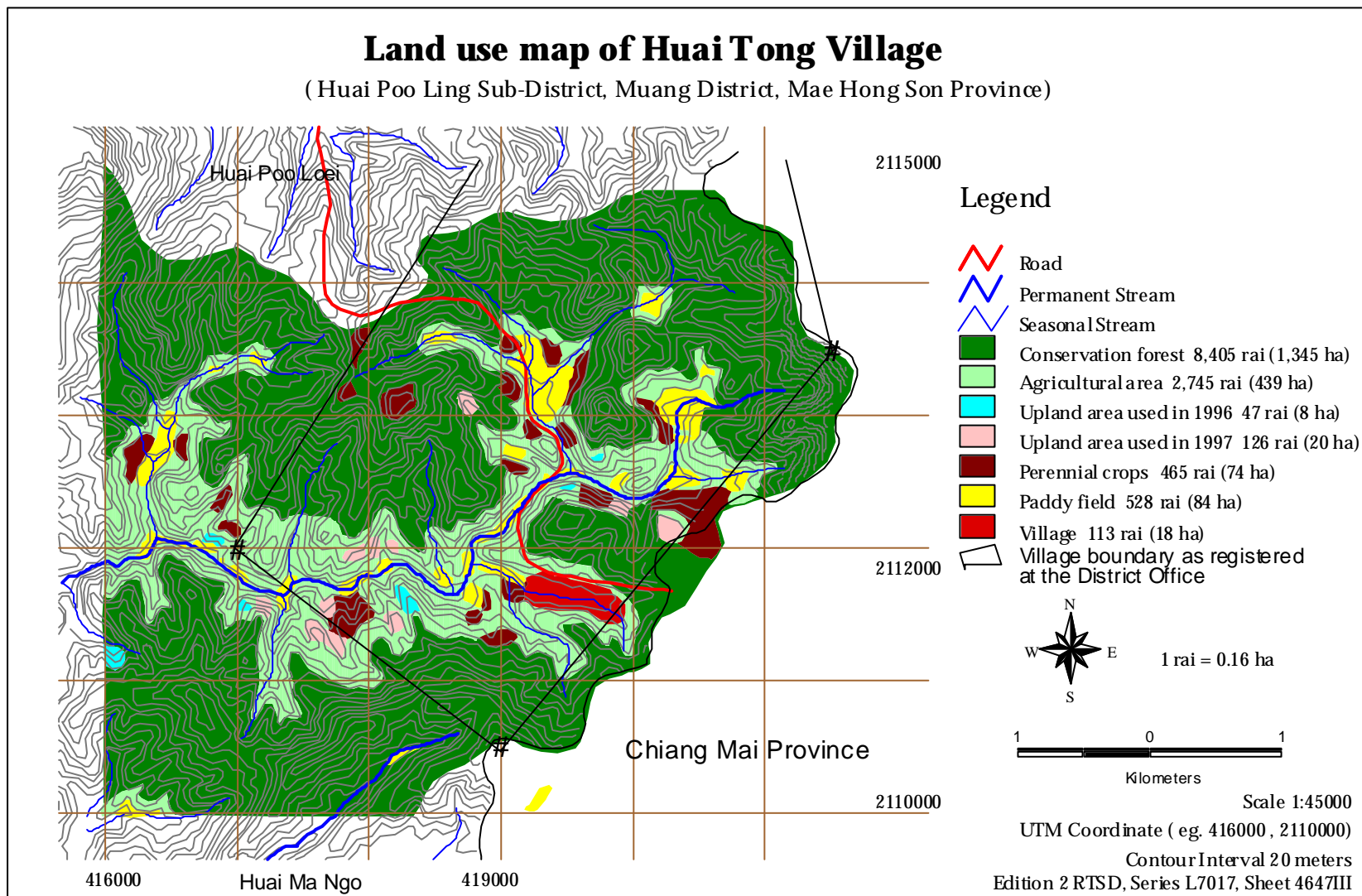
*Photo only available in hard copy*

When interviewed on this issue, village leaders responded that they do not quite understand the CLM approach, since after they displayed their land use on the topographic model, it was not recognized by the RFD, although that was the initial promise. Since the village has been permanent for a long time and was

also registered nearly 40 years ago, the fear of relocation was low, but several villagers had lost swidden areas to the RFD for reforestation and expected this to happen again after the closure of the TG-HDP.

The village boundary will become an issue in future, since it was redrawn when its former neighbouring satellite village Huai Poo Loei was registered as a key village (DOLA 1995). Again, the villagers' own demarcation was ignored and 30% of the land is beyond the boundary (Figure 4-6). As in the case of Huai Hea and Bor Krai in Pang Ma Pha, DOLA officials drew the boundary without asking villagers and the resulting modified boundary was not given to the village. Village leaders did not yet perceive the possible consequences that undoubtedly also affect land use planning, though they did request a copy of the boundary modification document. Parallel to this, the RFD has started to conduct a detailed survey of plot sizes and villagers fear they may lose land with the new policy of the Mae Hong Son Governor, who only allows for two-year fallows on uplands to reduce the total cultivation area. Additionally, only two upland fields are permitted and RFD has confiscated areas with trees of more than 10 cm breast height diameter in fallow areas and declared them to be permanent forest areas. One strategy in response to the threat of losing land by villagers is to plant hedgerows between fallow areas in order to show to RFD officials that the land is being used. It seems almost ironic that farmers have to resort to such tactics to keep their land, but in this uncertain situation of an insecure "*land deal*", villagers consider this the best tactic to maintain cultivation areas to sustain their livelihoods. In spite of this unresolved situation, Huai Tong has formulated village land use regulations under the influence of the TG-HDP (Box 4-4).

**Figure 4-6: Land use map of Huai Tong village**



**Box 4-4: Natural resource regulations of Huai Tong village**

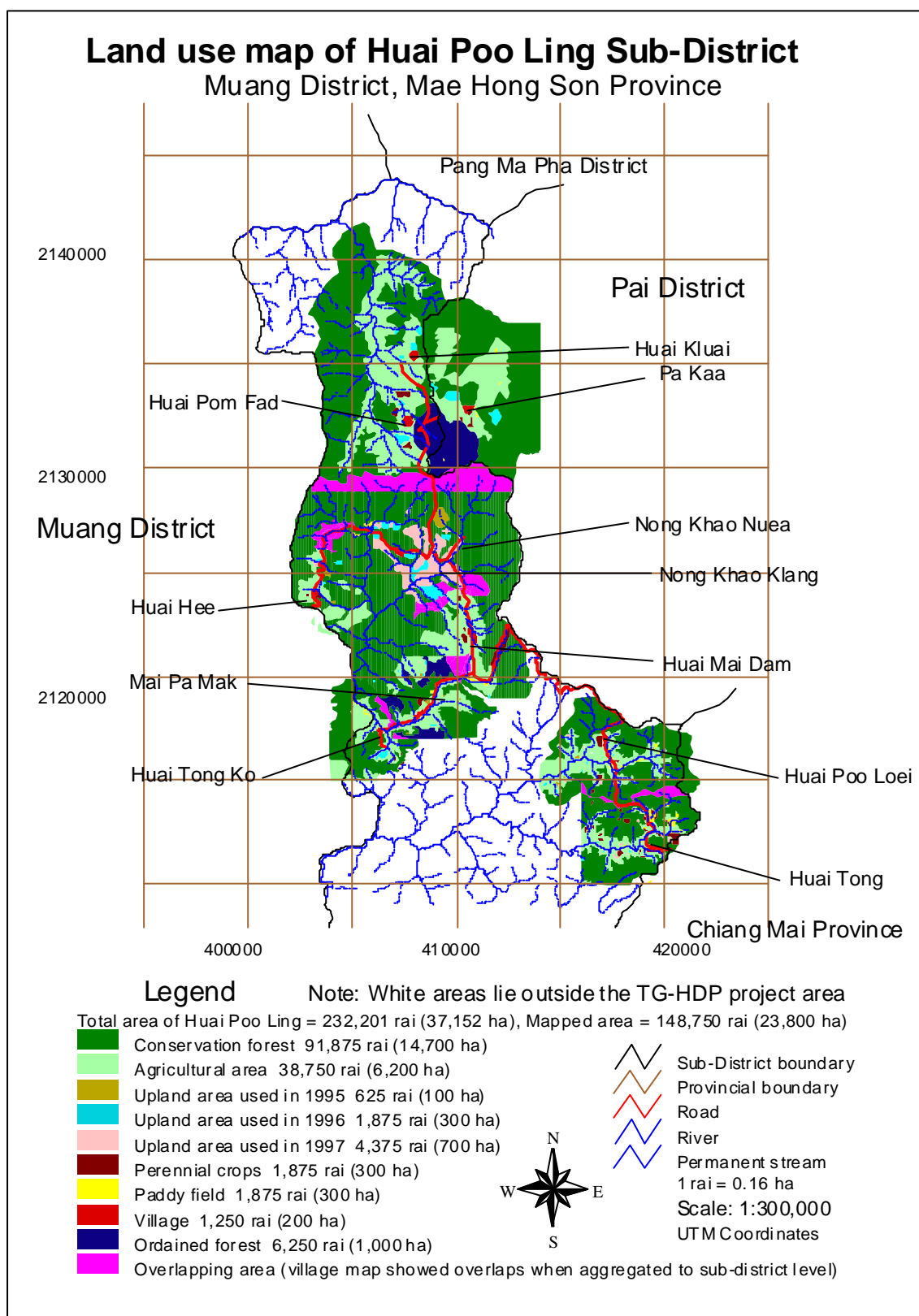
1. Limited wood cutting only in conservation forest, no farming (fine 1,000 Baht);
2. No chainsaw allowed and no logging for sale (fine 5,000 Baht);
3. Do not burn the forest (fine 500-1,000 Baht);
4. No sale of agricultural areas to outsiders;
5. Permission for woodcutting must be obtained from the village committee.

**4.2.3 Land use map aggregation at Tambon level**

The available village maps were aggregated on a sub-district map, and the white areas indicate villages that lie outside the TG-HDP project area (Figure 4-7). It is interesting to note that the village of Pa Kaa lies outside the Tambon boundary (and is in fact part of the neighbouring Pai district), if the data provided by the ONCB is correct. To date, no reliable maps exist from the Royal Survey Department indicating Tambon boundaries. But even more important is the fact that there are overlapping areas claimed by adjacent villages (marked in pink), which may lead to conflicting claims over its use, particularly since the DOLA draws still other boundaries when registering villages. In most cases this land lies in conservation forest areas, which means that the aggregated forest area of each village is actually less.

The total upland area of 6,200 ha makes up some 17% of the whole Tambon area, and together with perennial crops, paddy fields and land used in the last three years this amounts to 7,600 ha or 20% of the Tambon. The total mapped forest area amounts to 14,700 ha or 40% of the Tambon, but as only 23,800 ha of the Tambon have actually been mapped, the fact that 65% of it is conservation forest is more significant. This by far exceeds the target of 25% protected forests set by RFD nationwide.

**Figure 4-7: Land use map of Tambon Huai Poo Ling**



According to calculations made in this study, the area cultivated each year has increased from 100 ha (1.3%) in 1995 to 700 ha (9.2%) in 1997, a sharp increase that needs to be monitored. Aggregated data has a relatively high level of inaccuracy, but the most important priority for government agencies is the relation between conservation forest and upland area, and the figures show that the forest cover in Huai Poo Ling is very high, while only a small area is burned and cultivated every year.

The appearance of village maps can thus be deceptive when land use data is examined at the aggregated level. Calculated figures of digitised maps were compared to those posted in the TAO office based on manual calculations and show quite a few differences (Table 4-1). The greatest difference between figures are in the area demarcated as conservation forest, possibly because the TG-HDP has considered all the white areas outside the project area as forest, in spite of the fact that there are villages in these areas. There is more correlation between the total agricultural area, which makes up some 20% of the whole Tambon area, or with perennial crops and paddy fields, which if added brings the figure of used land to 25% of the whole Tambon. Aggregated data should therefore be considered with caution, since it illustrates overlaps of individual map.

Prior to the end of the TG-HDP in September 1998, the Tambon model was completed and left with the TAO office for future use. As population densities increase, it is expected that more land will be used for permanent agriculture. When aggregating maps, the patchy nature of the forest cover becomes more apparent. This patchiness is much more pronounced in Tambon Pang Ma Pha and could serve as an indicator that Huai Poo Ling may follow the same course when more development takes place. Huai Poo Ling does not have a village network like Pang Ma Pha, so that the only forum that brings villages together is the Tambon Administration Organisation (TAO), which has only recently been

established. The Tambon model was still considered as something belonging to the TG-HDP (Photo 4-8), which shows the lack of familiarity with this planning tool. Written Tambon plans had also not yet been formulated. Villagers need time to get used to planning formalities, as they are totally new to them. Even though in Huai Poo Ling the information was more readily available, its significance and resource tenure implications has yet to be fully understood.

**Table 4-1: Comparison of land use categories from two sources**

Land use type	TAO data	Ratio	Calculation	Ratio
Total Tambon area	37,152 ha		37,152 ha	
1. Conservation forest	28,434 ha	76.4%	14,700 ha	39.6%
1.1. Ordained forest	not mapped		1,000 ha	2.7%
2. Total agricultural area:	7,686 ha	20.7%	7,600 ha	20.5%
of which used in 1995	190 ha	2.5%	100 ha	1.3%
of which used in 1996	202 ha	2.6%	300 ha	3.9%
of which used in 1997	201 ha	2.6%	700 ha	9.2%
2.1. Perennial crops	106 ha	1.4%	300 ha	3.9%
2.2. Paddy fields	184 ha	2.4%	300 ha	3.9%
3. Villages	9150 ha	0.4%	200 ha	0.5%

**Photo 4-8: Tambon model of Huai Poo Ling**

*Photo only available in hard copy*





## **5 Evaluation of the research project**

### **5.1 Land use planning and the CLM process**

Land use planning and natural resource management in the highlands of Thailand have come a long way. For the hilltribe farmers, a total change in livelihood practices and agriculture has taken place, and more recently, they have been increasingly integrated into the Thai administration. The participatory CLM process, initiated by the TG-HDP, has influenced the target villages to move away from shifting cultivation and towards permanent agriculture, and has supported them in this process. However, judging from most discussions, the whole process is still perceived as an enforced change imposed on hilltribes, rather than a joint planning effort supported by government agencies. Villagers were grateful to have the TG-HDP as a mediator and supporter when dealing with agencies in order to have their priorities and interests properly recognised. Now that the TG-HDP is over, the future lies in the hands of the primary stakeholders themselves, though with increasing support from NGOs when negotiating with government agencies. It would now be important for government extension services to step in and support hilltribes in agricultural diversification with technical cultivation skills, seedlings and small-scale irrigation methods.

### **5.2 Topographic models and GIS application**

The combination of three-dimensional information in the form of models with digitised two-dimensional maps is assessed in terms of the extent to which they are indeed complimentary (RAMBALDI and CALLOSA-TARR 2000, 20) or whether the participatory aspect remains an “*Oxymoron*” (ABBOT et al. 1998, 27). The combination of topographic models with GIS maps brought to light unresolved and controversial issues that focus on who can update land use maps, to what

extent this is indeed a participatory process, misuse in terms of land confiscation for reforestation, and necessary policy changes so that these tools can be used in a constructive manner (Photo 5-1). With regards to upscaling, it is useful to differentiate between village and Tambon level, particularly as institutional responsibility mainly rests with the Tambon as the lowest level of government representation.

**Photo 5-1: Combination of digitised map and topographic model**

*Photo only available in hard copy*

### **5.2.1 Village level**

The integration of local concerns has been achieved to the extent that each village as a whole agreed on the area demarcations, which for planning purposes is a step forward from rough sketching without geographic references. This also applies to boundaries with neighbouring villages, with the exception of the western boundary of Huai Hea. As for fields outside the boundary, villagers are resigned to the fact that these will eventually be lost, although this is a

considerable sacrifice for them. As for government priorities, villagers have displayed the willingness to set aside a large part of their total area as conservation forest in line with government reforestation interests. Villages also fulfil criteria as permanent settlements with elected village leaders.

The inclusion of the boundary drawn by DOLA at village registration attracted a lot of attention, as none of the villagers had received documents with the relevant demarcations. Having these included on the drawing confirmed their fear of losing land and made them wonder why the TG-HDP or any other agency had not considered this, and some farmers even thought that these documents were withheld deliberately. In future the government agencies will only recognise DOLA boundaries, not those of the villagers, unless there is a chance for them to be redrawn. Linked to this is the fact the population will grow and new villages will be formed, so the process of taking land from the old village to allocate it to new villages will continue. This may cause tension as in the case of Huai Hea or it may happen on agreement as in the case of Bor Krai, but it would be important to have a standard procedure that is transparent to affected villagers, an approach that to date does not exist and thus leaves room for manipulation.

Major shortcomings are due to the lack of a clear and coherent policy for highland development. The Royal Forest Department (RFD) refuses to recognise the land demarcations of the villagers and continues to confiscate land, and the Department of Local Administration (DOLA) does not use village demarcations when registering villages. Thereby the initial trust farmers placed in the CLM approach has been severely disappointed. The early breakdown of the Land Use Planning Teams (ANONYMOUS 1998b, vol.1, 33) indicates that planning in agreement with government representatives never really worked, as the policy dichotomy between forest protection and permanent agriculture was never resolved and there is as yet no co-ordinated highland planning. Indeed, the two

key conditions named by the FAO for planning to be useful, namely, the need for changes to be accepted by all stakeholders and, even more importantly, the political will to put plans into effect (FAO 1993, 1) are conspicuously lacking. As long as such plans, be they in text or map form, can be overturned, there is no basis for a stable planning platform. Unclear land rights continue to be a “*killer assumption*” (BETKE 1994, 137) in the hilltribes’ struggle for a land deal, but a long-term land titling project funded by the World Bank and currently being implemented, once again leaves out the sensitive highlands (RATTANABIRABONGSE et al. 1998, 10).

Similar problems are also encountered with regard to the access of hilltribes to decision-making power and public knowledge, as the ownership of data has shifted in favour of outside agencies. Mapping revealed the extent of land use, and led to land confiscation by the RFD and the provincial Governor, as in the case of Huai Tong. This situation defeats the purpose of participatory planning, particularly since it is not backed up by a policy framework other than the restrictive watershed classification of 1983. There is no justification for land confiscation except when there is encroachment on mutually agreed conservation forest areas, but since RFD can reverse any demarcation, there is no basis for hilltribes that would encourage long-term planning with the government.

The issue of updating digitised maps is completely out of the control of villagers, as has been seen in Huai Hee and Huai Tong village, and requires an interested and cooperative approach by planning agencies for regular consultation. For villagers, even updating models on their own is difficult, as shown in the case of the *satellite* village Pa Charoen (Pang Ma Pha), which was left with an incomplete model after the end of the TG-HDP. On the technical side, the research was conducted with a Beta version of the Arc View GIS programme, which was a trial version for evaluation prior to its official release, and there are errors in the

programme that would need to be corrected should it really be used one day. If a system is set up properly it can also include data on marketing, yields, soil series and erosion indexes for map combinations. Here there is an important potential role for the development of a Monitoring & Evaluation system with a nationally accessible database as proposed in the current national plan (NESDB 1997, 148), but this would only be appropriate within the context of a mutually agreed development plan for the highlands.

### **5.2.2 Tambon level**

The same concerns are expressed at the Tambon level as to whether it would not be better to stick to topographic models only. On the local level, a clear priority is given for outer village boundaries as in the example of Bor Krai. This is more difficult to display on a small printout of a Tambon map, but can be done at poster size. One reason why it is so important for villagers to demarcate *outer user boundaries* at Tambon level is related to the hope of receiving recognised land rights or titles, which in the early days of CLM had been promised individually (ANONYMOUS 1998b, vol.1, 46). Now that these villages are registered and village leaders are members of the Tambon Administration Organisations (TAO), they reiterate their hope of obtaining land rights at communal level. The idea is not entirely new to Thailand. In the concept of *Forest Villages*, initiated in 1975, settlements established in forests were allocated 2.4 ha per family with certified occupancy rights, and government agencies were to develop amenities (HAFNER and APICHATVULLOP 1990, 337). This programme was designed for Thais only and hilltribes were excluded, but as nearly 90% of hilltribes in the TG-HDP areas have gained Thai citizenship, they would qualify for the same rights should the approach be discussed anew.

Under the current process of decentralisation, the TAO act was a big step forward in integrating registered hilltribe villages in the Thai administration, and the second Master Plan for Highland Development supports that. However, as long as the Royal Forest Department (RFD) and the Department of Land Development (DLD) are not represented at TAOs and in the District Hilltribe Committee, there will not be joint planning with a common goal and with negotiated priorities. It is very difficult to obtain the commitment from farmers for planning if two key agencies are absent in the decision-making bodies. The absence of these key agencies at Tambon and district level is inconsistent with the aims of the 8<sup>th</sup> NESDP that calls for participation of local communities, and this once again reveals the highly political nature of forest management (GANJANAPAN 1998, 73).

The potential to deal with these differing priorities at Tambon level could evolve from the current restructuring project of the Ministry of Agriculture and Cooperatives (MOAC) as part of an ongoing process of decentralisation. A part of this reform at the grass-roots level has been the introduction of Technology Transfer Centres (TTC), which was initiated in 1998. So far, 82 TTCs have been established nationwide by the Department of Agricultural Extension (DOAE), and the aim is to cover all Tambons in the next few years (GTZ 2001, 14), so Tambon Huai Poo Ling and Pang Ma Pha will eventually also be included. There are plans to link new TTCs with TAOs, of which all registered villages are members, and TAOs will become the major future channel for the transmission of funds and resources, though the details of responsibilities are still being developed. For the time being, topographic models are more suitable for planning at Tambon level and easier to update, but should TTCs be properly equipped in future and highland policies harmonised, digitised maps will gain in importance.

### **5.3 Informal communal planning prior to policy?**

Even though the political backup for community based resource planning is still missing, various organisations are working with participatory mapping and planning approaches at different levels, and Non-Governmental Organizations (NGOs) as well as informal farmer networks such as the Pang Ma Pha Hill tribe Network in Mae Hong Son, are growing in importance, (JANTAKAD and CARSON 1998, 6). The furthest steps have been taken by CARE with the establishment of Village Forest Conservation and Watershed Management Committees (ANONYMOUS 1997), in which government and village representatives are members and sign land use agreements that use digitised maps as baseline information. So far this is the only documented case where this has led to written documents. These have given highland farmers the necessary confidence and trust that their land use planning efforts are recognized by the government and should serve as a model to be followed, with subsequent local adaptations.

After the end of the TG-HDP in September 1998, the complex process of participatory land use planning was seriously threatened by the politics of the new Governor of Mae Hong Son province, who only allowed two-year fallow periods on uplands and only two upland fields per household. Farmers overstepping this limit have been arrested. Additionally, the RFD has been given permission to confiscate fallow land with trees that have a breast height diameter of more than 10 cm to declare it permanent forest, although none of these measures are backed up by official RFD policy. This new development undermines the achievements to date and causes a lot of damage to the participatory process.

On the positive side, the DLD has produced an extension book on land capability in Mae Hong Son (DLD 1994). In response to the Cabinet Resolutions of April 1997 regarding land settlement in forest areas, there has even been an attempt by the RFD provincial office in Chiang Mai to solve land use conflicts (RFD 1997).



However, the preface reveals it's priorities when it states that 70% of the land is in “*perfect condition*”, meaning under forest cover. Some RFD staff in Mae Hong Son is in favour of the CLM approach and joint planning with hilltribes, and this also applies to the Community Forestry Division in Bangkok, but unless the laws and mandates are changed, individual officers will not go against official policy.

**Photo 5-2: Which future for land use planning in the highlands?**



*Photo only available in hard copy*

## **6 Recommendations for future planning**

This study has been conducted under difficult circumstances and an unresolved policy framework for highland development that already foiled the attempt of the TG-HDP to set up long-term land use planning teams. Additionally, the TG-HDP was ended prior to the completion of the research project and the GTZ has withdrawn from all natural resource projects in Thailand (the SMRP project does not conduct land use planning). Therefore it is difficult to formulate clear recommendations for future planning, as it is uncertain to whom these recommendations should be directed.

### **6.1 Planning is a long-term process**

Any project that embarks on land use planning with hilltribes should realise the time this will take, particularly since they are not familiar with government planning structures. This confirms criticisms made of the standard “*Project Model*” (VAN DAM 2000, 13), in which project periods are fixed and are imposed on communities that have little to do with their conception of time. When land use planning started in 1990, the TG-HDP was already in the follow-up phase in Nam Lang, with reduced post-project activities scheduled for 1995-1998, while in Huai Poo Ling post-project activities were planned for 1997-98. This was after it was realised that the preceeding Soil and Water Conservation approach had to be modified completely. The time was much too limited to establish sustainable changes and structures, so that the TG-HDP closed down at the time when the Hilltribe Network and TAOs were just emerging, and could therefore not support this development to the stage of an established process.

## **6.2 Data quality and application**

The usefulness of results is based on their quality as well as on the nature of the projects that might apply them. This research project changed from a technical approach with the use of remote sensing, satellite imagery and GIS to a more descriptive one based on a very particular policy framework in Southeast Asia that still renders participatory land use planning in the highlands illegal, even after 20 years of development programmes. This also affected the data quality and work methods, for detailed satellite imagery and aerial photographs were not supplied by the Royal Survey Department (RSD) on security grounds connected to the situation in border areas. Some outdated photographs on a scale of 1:50,000 were eventually made available, but as ICRAF Chiang Mai confirmed, a higher resolution is required for work at village level. The same applies to GIS, for there was no GIS programme, nor a database for Mae Hong Son at the TG-HDP, so it was later only possible to work with a small trial version from Chulalongkorn University, which was handed over to ICRAF upon departure from Thailand.

This raises the issue of whether a development project should work with those means on its own and to what extent a small research project should introduce such complex and expensive technology, a matter debated for land use planning in Asia (ELLER 1996, 52). On the other hand, the employment of even a simplified Beta version of GIS enabled the documentation of local land use classification at village and Tambon level, as well as the overlay of boundaries drawn by DOLA upon village registration, an approach that to date is new in Thailand. Thereby the contradictory policy framework was illustrated graphically, yet this controversy could have been displayed even better had the RFD made the restrictive watershed classification available for inclusion. Unfortunately, the author could not obtain this data, despite repeated attempts. Under the given conditions, the

best possible use of information was made as an illustrative example, and it is now up to other organisations to build upon this approach.

### **6.3 Institutional implications**

There are a number of institutional implications to this study. However, these need to be seen within their particular situations regarding the process of institutionalisation of participatory land use planning, which occurs largely without the influence of bilateral development projects, as most of them have been terminated. At the same time, the current restructuring of the Ministry of Agriculture and Cooperatives, with an Asian Development Bank (ADB) grant and assisted by the GTZ (GTZ 2001), could be used as an opportunity to rectify policy contradictions such as a needed revision of the restrictive watershed classification and to use proposed alternatives (KNIE and MÖLLER 1999). Some experiences of GIS application at village level and when aggregating data at Tambon level could be used for this approach, such as degazetting (or removal from the RFD authority) areas for agricultural use. Another controversial topic is land titles, which were uncommon in Thailand in the past (CHALAMWONG and FEDER 1988, 132), but due to overall improved infrastructure, even hilltribes have heard about the Thailand Land Titling Project (RATTANABIRABONGSE et al. 1998) and hope to be included in that programme. In terms of national plans, the Second Highland Master Plan as well as the Eighth National Economic and Social Development Plan both expire this year, so that the issues named above could be included in new plans.

Here the Tambon could evolve as the true interface between government and society, both in terms of a technical perspective with new Technology Transfer Centres (TTC), as well as an administrative one with existing Tambon Administration Organisations (TAOs). The proposed plans to link TTCs with TAOs (GTZ 2001, 15) need to consider the importance of representation of key

agencies like forestry (RFD) and land development (DLD) for aspects of land management in TAOs, as well as local administration (DOLA) and social welfare (DPW) for the registration of villages with clear and agreed upon boundaries. The mandate for TTCs could rest with the extension department (DOAE) in the development of information and the provision of training to familiarise village leaders with the planning structures of the government. The procurement of data and updates at village as well as Tambon level can of course not be carried out by government representatives at Tambon level for lack of technical and logistical infrastructure. However, the membership of key agencies at this level could be a starting point to link with higher planning levels such as the ICRAF office or the SMRP project in Chiang Mai that have the means to generate land use maps and plans for the Royal Forest Department as their counterpart agency. CARE in Mae Chaem district of Chiang Mai already works with ICRAF in this manner for digitised land use maps (ANONYMOUS 1997).

At the moment, the above suggestions may seem a little premature when looking at the tedious process of a Community Forestry Act over ten years, but at the same time could serve as an indication for the direction the process of institutionalisation should take, however slow it may be.

## **6.4 Timing of the study**

The timing of the study towards the end of the longest development project in northern Thailand is controversial, depending on the perspective. In terms of development, it was interesting to witness the changes beyond project duration, such as the Cabinet resolution of June 1998 revoking forest settlement rights (EKACHAI 1998, 11) and more locally, the confiscation of land by RFD officials and the arrest of hilltribe farmers cultivating more than two upland areas by the Governor's office in Mae Hong Son. A petition by Tambon leaders to the

Parliament in Bangkok for the recognition of their livelihoods, supported by Thai versions of digitised land use maps to show forest conservation efforts, failed to calm the difficult and highly political situation.

From the viewpoint of the TG-HDP, which expired before results were available, the research project should have been conducted three years earlier in order to integrate results into project work. Here it needs to be stressed that the author fully agrees, but there were a number of administrative and bureaucratic hurdles beyond the control of the writer that led to the late start of research, including uncertainty as to whether it would take place at all. The TG-HDP supported the application process from the beginning. This is also part of the reason why it was attempted to share results with institutions operating on a long-term basis, such as ONCB, ICRAF Thailand and the new Special Research Project of Hohenheim University, the latter two being based at Chiang Mai University. Among development projects, this extended to SMRP, CARE and the Mekonginfo internet site of the Mekong River Commission (MRC).

## **6.5 Applicability to neighbouring countries**

It might be possible to extend this research approach to neighbouring countries with similar problem situations, but here again a word of caution is necessary as to its replicability, given the very specific lack of a political framework. In Laos the situation is more severe for shifting cultivators, as the Lao participants at the TG-HDP workshop on June 1998 repeatedly pointed to their government's declared objective of eliminating shifting cultivation by the year 2000! In this situation the research approach would be even less participatory than in Thailand. In Vietnam, the problem situation is much more acute due to a higher population density in the highlands, with more severe competition for land and resources. But Vietnam is more progressive in that all ethnic minorities are also Vietnamese citizens, so that they have the same constitutional rights to extension services.

In Myanmar, with the repressive military dictatorship in power, joint planning with hilltribes would be pure utopia and unlikely to happen.

The future of land use planning in regional rural development (RRD) projects is uncertain, given steadily declining development aid by donor countries in favour of “*consolidation*”, and the parallel orientation towards private investment and cooperation, thereby splitting up multisectoral problem complexes into separate entities. This results in a loss of an integrative approach and constitutes a kind of “*subsidiarity*” of a different nature. The same applies to the GTZ, which has been gradually phasing out large-scale RRD projects in Southeast Asia. This also affects the availability of planning tools in that the integrated land use planning group of GTZ has dissolved after it produced a manual (GTZ 1995). This study will of course not be able to reverse that trend, but in spite of the overall situation, it stresses the point that land use planning is not history. Particularly in northern Thailand a stage of debate and application by local institutions like Hilltribe Networks and NGOs has been reached, so that the process of institutionalisation will continue as the country continues on its path to democracy.

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## Appendix: Important events and research plan

Date	Where	Activities
14-18.10.96	DSE, Bad Honnef	Seminar on Participatory Development Work in Rural Areas, and GIS-Workshop
18-22.11.96	DITSL, Witzenhausen	
11-16.3.97	MHS and Nam Lang (NL)	TG-HDP meeting to review CLM
3-4.4.97	Chiang Mai University (CMU)	Workshop with Hohenheim and Kasetsart University on Special Research Project (SRP)
28.4-2.5.97	Bangkok	Trip to DLD, RFD, IBSRAM, RECOFTC
25-28.5.97	MHS	Phasing out workshop with RIAs and RFD training on participatory working approaches (PWA), visit to RFD office data application
2.9.97	CMU	ICRAF follow-up workshop on "Indigenous Strategies for Intensification of Shifting Cultivation in Southeast Asia" at CMU
11-13.9.97	NL, Luk Khao Lam, Huai Hea	NRM network meeting in Huai Hea on land conflict with Pa Puak, collection of village maps for digitisation
6-10.10.97	Chiang Mai University (CMU)	Hohenheim, Kasetsart and CMU seminar on joint MSc projects
17.10.97	TG-HDP	Seminar on integration of village maps into GIS with 15 people and Dr. Saengsawan from Chulalongkorn University, ArcView3 given
28-30.11.97	MHS, Huai Hee	Eco-tourism trip and hiking with Tawatchai Ratanasorn and GO/NGO group
11-12.12.97	Hohenheim University	Tropentag, Poster Presentation

Date	Where	Activities
2-6.3.98	Huai Thong, HPL, Huai Hee, MHS, NL, Huai Hia, Luk Khao Lam, Bor Khrai	Trip with Prof. Dr. Uwe Nagel to villages to study CLM situation, discussion of future research and structure
28.4.-4.5.98	Bangkok	Meetings at DLD, RFD and Royal Survey Department (RSD) for aerial photographs
25-29.5.98	Doi Inthanon, Mae Chaem, Yang San, NL, Bor Khrai, Tung Jaw	Community Leaders Cross- Visit Programme of TG-HDP prior to final NRM international workshop, discussions of problem situation
1-5.6.98	Empress Hotel Chiang Mai	TG-HDP workshop on NRM experiences in highlands, presentation of own first results
8-11.6.98	Bangkok	Collection of aerial photographs at RSD
26.1.99	CMU	MSc thesis defence of Tawatchai Ratanasorn on hilltribes and ecotourism
27-29.1.99	Rincome Hotel Chiang Mai	CARE workshop on "Sustainable agriculture and survival of watershed forests"
18-22.2.99	CMU, all 6 target villages	Final workshop for presentation of results, with 2 MSc students, and village field trip
9.3.99	Alliance Française, Informal Northern Thai Group	Presentation on: "Does participatory Land Use Planning have a chance with hilltribes?"
23-28.5.99	Purdue University (USA)	Paper presentation at 10 <sup>th</sup> ISCO Conference
14-15.10.99	Humboldt University Berlin	Tropentag, paper presentation
11-12.10.00	University of Hohenheim	Tropentag, paper presentation

## Research Plan

Section (topic)	Research Questions	Hypotheses	Means of Survey	Data Sources
<b>Part 1: The change process from shifting cultivation to permanent agriculture</b>				
Background of Highlands	How did highland development start?	Highland development was a means of pacification and centralised control	texts of development projects, interviews	Books on highlands
Development and forest resources	How were priorities for highland development set?	Massive exploitation from 1880; development came only in 1970s	literature, RFD history papers	RFD office, university
From opium to perm. agriculture	What were the motivations behind changing highland agriculture?	Thailand used aid to develop its frontiers; erosion issues came later	literature, interviews with old people	Books by projects, NESDB and plans
MSc thesis topics: 1. Eco-tourism 2. GIS use for LUP 3. Fruit trees	Effects of eco-tourism on land use? How can TG-HDP information be integrated into GIS? Impact of fruit trees?	Eco-tourism is an increasing source of income GIS will be used more in future Limited potential of fruit trees in hills	separate proposals and planning steps	HU, MCC, Non-Formal Education, Geography Dept. at CMU
<b>Part 2: Definition and process of participatory land use planning</b>				
Definition of LUP and purpose	Who and what are we planning for?	LUP as technology extension was not sufficient, work more with people	literature, aims of development projects	GTZ, FAO guidelines, articles
LUP in Thailand, overview	Is planning done in political or watershed units, role of villagers?	Western influence brought PLP to Thailand, villagers have to comply	literature survey, study of various plans	NESDB Plan No. 8, RFD and DLD plans
Methods and tools used in TG-HDP	Emphasis on individual or communal land tenure, effect of decentralisation?	Planning is at a stage where it goes further than mere illustration	literature and project documents	CMU and project reviews

Section (topic)	Research Questions	Hypotheses	Means of Survey	Data Sources
<b>Part 3: Traditional land use planning practices</b>				
State of swiddening in transition	What future do these systems have, can they adapt to govt. priorities?	Shifting cultivation is history, future is permanent farming	literature, interviews, PRA, mapping	documents, field staff, village leaders
Traditional planning	How can traditional knowledge be used in the transformation process?	Planning has to conform to government priorities for acceptance	interviews, models and mapping, PRA	target villages for surveys
Importance of rice	Rice and other food sources?	Where irrigation, paddy rice grown	PRA, interviews	target villages
Role of opium	Did most cash come from opium or was it only a safety crop to rely on?	opium became an issue as govt. and foreign projects made it a problem	literature and interviews	Social Research Centre of CMU
<b>Part 4: Impact of Development Programmes on land use planning</b>				
Government Agencies	What are the highland plans and how are they co-ordinated?	Largely sectoral planning, little joint efforts, RFD dominates highlands	literature, interviews in target villages	Govt. documents and target villages
Bilateral Projects	Introduced planning and purpose?	Participatory planning was new way	literature, interviews	project documents
NGO Projects	How can they approach LUP?	NGOs are now more recognised by Thai Government, not as a threat	literature and interviews	NGOs and villagers
<b>Part 5: Political and Institutional Framework for land use planning</b>				
Village structures	Village structure enough for planning?	Villages need coherent social structure	interviews village visits	TG-HDP, villages
Higher levels of planning: Tambon	Can GIS be integrated in process?	Policy still in process of formulation, little to no effect yet	village meetings, GPS use for mapping	target villages and TAO councils
Process of decentralisation	Which new mandates will TAOs have for NRM?	TAOs need technical support to make NRM plans	literature and TAO meetings	DOLA, RFD, DLD

Section (topic)	Research Questions	Hypotheses	Means of Survey	Data Sources
<b>Part 6: Planning Natural Resource Management in future</b>				
Continuation of decentralisation	Should NRM be linked to land rights, and in what form, watershed level?	No immediate chance for land titles, only communal user rights	interviews, aerial photographs	target villages, administrations
Projection of Karen system	Future of NRM with local regulations, diversified incomes?	Govt. recognition of fallow areas crucial for viability of the system	PRA, interviews, mapping	target villages, local administrations
Future of Pioneer system	Can complete adaptation to permanent agriculture be achieved?	Abandonment of traditional practices necessary for permanent agriculture	PRA, interviews, scenarios for future village situation	target villages, local administrations
Planning Platform	Mandates and operational structure?	RFD, DLD, DOLA membership is necessary	Proposed structure	Highland Plans





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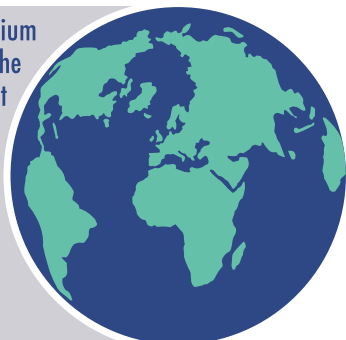
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Bundesministerium  
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Im Auftrag des Bundesministeriums für  
wirtschaftliche Zusammenarbeit und Entwicklung (BMZ)