

“Participation” in a conflicting policy framework

Lessons learned from a Thai experience

► By **OLIVER PUGINIER**

This article summarises some outputs from a PhD research project on land use planning funded by the Tropical Ecological Support Programme of GTZ from 1997 to 1999. The research assessed the participatory approach of the Thai-German Highland Development Programme (TG-HDP) in Mae Hong Son in northern Thailand. In order to go beyond the village dimensions and ferry community based land use planning from local to higher institutional levels, the research tried to combine land use mapping by hill tribe communities with conflicting land uses resulting from misaligned government policies by using a simplified Geographic Information System (GIS). Constraints to participatory planning are illustrated and we call for the

formulation of a coordinated government policy for highland development.

Background

The highlands of northern Thailand are a prime example where diverging policies on forest preservation and integration of ethnic minorities conflict. This is particularly evident in remote forested areas where shifting cultivation practices are at odds with centrally designed land use and conservation plans.

The mountains of Thailand have been populated starting from the lowlands through sequential immigration waves. The earliest settlers were northern Thais who occupied the lower elevations (up to 1,200m). Tibeto-Burman mountain peoples moving in from China followed and settled at higher elevations. The

Karen started to move in during the 17th century, followed by Yao, Akha, Lahu and Lisu people at the beginning of the 20th century. The Hmong only started to settle from the 1920s, yet most hill tribes only migrated to Thailand in the last 50 years as a result of conflicts in neighbouring countries.

Traditionally, forest farming systems were based on shifting cultivation, with various forms among northern Thais as well as hill tribes (Figure 1).

Forest resources in the highlands¹ have been subject to increasing pressures. These have been affected by two parallel developments of rapid population growth and a drastic disappearance of forest cover, from 60% in 1938 (RFD, 1993) to as low as 15% (Maxwell, 1997), both of which have been blamed exclusively on the hill tribes. Land resources have become very scarce, to the point that swidden farming has been reduced to one or two-year fallows and has been characterised as “degraded” (Ganjanapan, 1998). Yet it has to be noted that hill tribes account for only 1.6% of Thailand’s population of 62 million (ADB, 2000), and that a correlation between forest loss and population showed that an increase in the Thai population is a more significant factor (Rerkasem and Rerkasem, 1994).

Government policies and hill tribe priorities

In the early ‘70s, the Government intervention has been characterised by a strong emphasis on the eradication of opium cultivation in the famous “Golden Triangle: The Thai Central Committee for Drug Abuse Control was established in 1975 (Renard, 1997), and foreign donors supported the government through a number of co-funded development



Photo by Oliver Puginier

Figure 1. Emergence of highland rice on swidden fields

¹ In Thailand, elevations up to 500-m a.s.l. are defined “uplands”. Elevations exceeding 500-m are referred to as “highlands”.

programmes. These peaked to a total of 168 agencies from 31 government departments and 49 international donors in the late 1980s (Ganjanapan, 1997). The 1980s saw the start of highland development programmes implemented by three lead agencies: the Royal Forest Department (RFD), the Department of Land Development (DLD), both belonging to the Ministry of Agriculture and Cooperatives, and the Department of Public Welfare (DPW) under the Ministry of Interior. The Office of Narcotics Control Board (ONCB) became the Thai coordinating agency for international projects.

As a reaction to rapid deforestation, the RFD formulated in 1983 the first watershed classification, placing most of the highlands in watershed class 1A. This prohibited any form of settlement or agricultural activity and rendered hill tribe livelihoods illegal (Tangtham, 1992). The first national forest policy followed in 1985, which set a forest target of 40% (15% conservation and 25% production forest). Slopes of 35% or more were declared as forestland. The forest targets were reversed in 1987, with more emphasis on conservation. At the same time most of the country's national parks were established, though often without considerations for local people already living there. Commercial logging was banned in 1989 (Pragtong, 1993). Later the issue on communal forest conservation led the RFD to draft a Community Forestry Act in 1991 (Amornsanguansin, 1992). The document has since been a highly controversial political issue. RFD even produced a Thai Forestry Sector Master Plan in 1993 that called for the participation of local communities. The plan has never been implemented as it lacked provisions for effective participation of key stakeholders (Jantakad and Gilmour, 1999). So far no policy on community forestry has translated into a tangible, effective and officially en-

dorsed government legislation or plan.

Planning policies led to the First (1992-1996) and Second (1997-2001) Master Plans for Highland Development and Narcotic Crops Control, both focusing on the socio-economic improvement of hill tribes, their settlement in permanent villages, community organisation and environmental conservation (RTG, 1997). There has also been a recent shift towards decentralized planning through the enactment of the Tambon Council (TC) and Tambon Administrative Organisation (TAO) Act, in March 1995. The objective of the legislation is the propagation of democracy at grass-roots level by organising villages into Tambons (sub-districts), with elected village leaders having mandates for local government functions (Nelson, 2000). Decentralisation is supported by the 8th National Economic and Social Development Plan (1997-2001), which states: *"Local people and community organisations should be urged to play an increasingly active role in the management of natural resources and environments"* (NESDB, 1997).

The plethora of policies and development projects has led to a situation whereby hill tribes are caught between three divergent policies regarding forest settlement and farming:

- The restoration of forest cover to 25% conservation and 15% production forest, enforced by the RFD, using the restrictive watershed classification. In implementing the policy RFD even considered forced hill tribe resettlement.
- Village registration 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 recognised village leaders.

- The classification of highland communities according to their potential for permanence, assessed in terms of household numbers, permanent settlement and land suitability for permanent agriculture. The Department of Land Development carries this out, though without coordination with RFD regarding the forest status, and without considering community perceptions in terms of land classifications.

When filtering development priorities through a hill tribe peoples' perspective, the priority problems include inadequate nutrition, low income, production below self-sufficiency level, shortage of land, and lack of land security (TG-HDP, 1998). This means that hill tribes are primarily seeking food self-sufficiency and resource tenure to meet their subsistence needs as well as village registration to access government services, prior to modifying their traditional farming systems towards permanent farming. By reducing the extent of forest areas under swidden farming and gradually adapting to permanent fields with integrated agroforestry as well as soil and water conservation measures, hill tribes are attempting to make a compromise with the government, a process that I have labelled a "land deal". In exchange for their adaptations, they expect official government recognition including permanent settlement, and the promised extension support.

A case study of participatory land use planning

The case discussed in this paper focuses on mediation and conflict resolution to overcome the dichotomy existing between forest protection and subsistence farming. Highland development programmes were encouraged by the gradual policy shift towards a broadened participation of local people, and several embarked on a participatory land use planning as an ap-

Box 1. Critical review of the “participatory process”

Reviews of the CLM approach pointed out problems of farmers’ adoption of the approach and difficulties encountered by the Land Use Planning Teams (TG-HDP, 1998). Villagers were seeking to achieve lands use rights, opposed the outer user boundary and felt insufficient attention was paid to their traditional land use categories, while the Land Use Planning Teams 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 insecurity of land use rights and perceived as not conducive to Land Use Planning Teams – community interaction. An additional factor weakening participatory land use planning was the government policy of village relocation out of protected forest areas. Nevertheless, the inhibiting effects of the controversial policy framework were not taken seriously enough as land classifications were transferred to Tambon models, while RFD continues to have a protective mandate for much of the highlands.

The experiences of the TG-HDP have shown that a land use planning approach based on land capability in combination with hill tribe priorities, can be successful to a certain extent, yet unresolved policy issues will endure beyond the lifetime of a project. The situation may be compared to the effects of a “*Project Model*” (v. Dam, 2000), whereby a project usually responds to a particular way of looking at reality and knowledge that is often perceived differently by the target group it is working with. Reality often only exists as long as it relates to the project, with little flexibility to readjust objectives according to target groups or external changes like government decentralisation in Thailand. Trees are often seen as isolated from the rest of nature and farming systems, so that a holistic view of trees as part of a larger livelihood system is missing. Project periods are fixed and are imposed on communities that have little to do with their notion of time. As important as participatory methods may be, they are also part of a larger power relationship between different actors, and in this context national policies will prevail over well-intended project interventions.

proach to address the problems and priorities of different stakeholders.

Where there is competition for limited resources, planning aims to strike a balance between a rational technical approach of resource valuation and a social basis for conflict resolution (FAO, 1993), yet two conditions must be met if planning is to be useful:

- The need for changes in land use must be accepted by the people involved;
- There must be the political will to put the plan into effect.

This article examines the approach of the longest running bilateral project as a case study, namely the Thai-German Highland Development Programme (TG-HDP) that operated for 17 years (1981-1998). One component of this rural development project concentrated on a participatory process of classification and mapping of natural resources at the village level, and was initiated in 1990 in three villages of Mae Hong Son province. By the time the project ended, the activities included 30 villages in the project areas in Nam Lang as well as Huai Poo Ling sub-district (Figure 2).

The TG-HDP developed the so-called Community Based Land Use

Planning and Local Watershed Management (CLM). The process meant to help in achieving an improved sustainable use of land, water and forests, the rehabilitation of watershed catchment areas and an intensified agricultural production on suitable land (Borsy and v. Eckert, 1995). The original CLM concept of 1989 even proposed the allocation of land titles to participating farmers for a later stage of implementation. In contrast to the advo-

cated “participatory approach,” planning strongly relied on three-dimensional topographic models for mapping out the following land categories together with villagers:

- Village and housing area including home gardens;
- Arable land for annual crops and pasture areas;
- Arable land for perennial crops and agroforestry;
- Social and community forest-land, and
- Watersheds and conservation forest.

The above land categories neither reflected the diversity of land uses by hill tribes nor included areas used for spirit worship, cemeteries as well as swidden fields. The CLM approach concentrated more on the modification of traditional agriculture towards “improved” land use, applying soil and water conservation measures, as well as on forest restoration. Although the participatory style of the approach may be questioned (see Box 1), it reflected the position of the project as a mediator between farmers and government agencies. Furthermore, “outer user boundaries” were delineated, beyond which no activities were permitted. These were meant

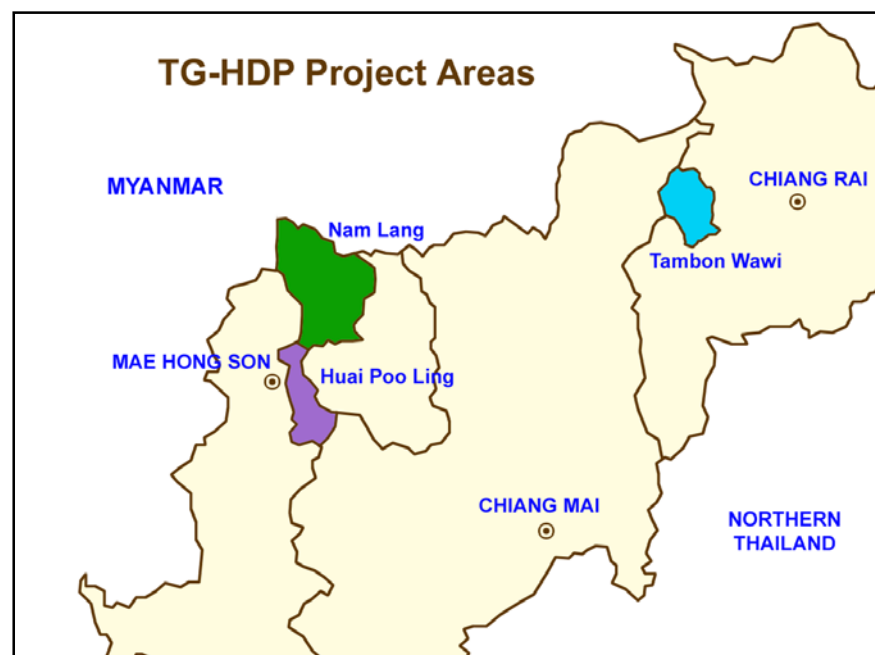


Figure 2. TG-HDP project areas in northern Thailand

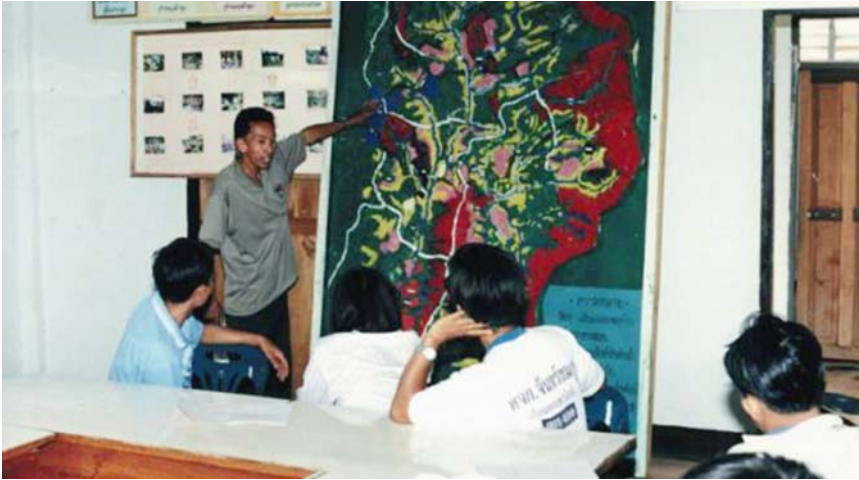


Photo by Oliver Puginier

Figure 3. Tambon Secretary of Tham Lod shows land use to village leaders

to represent village boundaries for official registration with DOLA. By displaying this information on three-dimensional land use models made of cardboard or polystyrene to a scale of 1:8,000, it was possible to measure areas and show land uses to outsiders. The whole approach was meant to operate via Land Use Planning Teams (LUPT) from various implementing agencies. In the final project phase (1995-1998), the TG-HDP focused on updating the models and on aggregating land use information at the Tambon level (Figure 3).

In order to go beyond land demarcation and to carry the CLM process from the village to higher planning levels, the accompanying PhD research examined possibilities to transfer the data from village maps into a Geographic Information System (GIS), so as to provide visual information that would be understood by the people who displayed it and by those who would interpret it.

There are several challenges when combining participatory approaches and GIS (Abbot et al., 1998):

- Scaling up to show local concerns as well as broad regional or national perspectives, so that local priorities can be integrated into regional plans.
- Access by the local people to

decision making power through the ownership and use of data, which in the past was limited to a few highly-placed decision makers and thus constituted a merely extractive extension tool.

- A land use model or GIS turns local knowledge into public knowledge and out of local control, and can be used to locate resources or extract more taxes.

Data management and local interests are controversial in the unclear Thai policy framework and can be linked to the wider issue of whether planning with the local people is more effective for natural resource protection than restrictive

laws and forceful relocations. The question of whether effective forest protection should concentrate on inhabited areas instead of national forest reserves, is seen in a new light in Thailand since the Salween forest logging scandal of 1998 in Mae Hong Son. RFD officials then participated in illegal teak logging (Kaopatuntip, 1998).

Local planning has a potential to help in the areas of conflict resolution between villagers and government agencies, the assignment of land titles and the determination of sustainable forms of agriculture. Yet the exposure of land use to authorities can have undesired consequences for farmers that could include land confiscation. Two examples from villages in Nam Lang illustrate the range of issues related to the productive or prejudicial use of maps, updates and implications for officially registered villages.

Pa Charoen village (Tambon Pang Ma Pha)

Pa Charoen (class 1, permanent village according to DLD, 1994) is a small Red Lahu village (80 people) north of the Pai Wildlife Sanctuary. It covers 48 ha and was established as a settlement in 1987. It is a *satellite village* of Ya Pa Nae (key village No. 5), and as such it has no official



Photo by Oliver Puginier

Figure 4. Incomplete land use model built by the TG-HDP in May 1998



Figure 5. Aerial view of Pa Charoen village

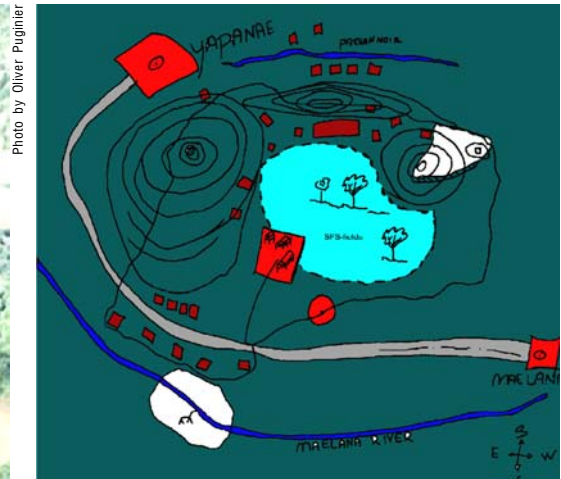


Figure 6. Land use map of Pa Charoen village

status, nor is it part of a Tambon Administrative Organisation (TAO).

When visited in 1999, one year after the completion of the TG-HDP, Pa Charoen made an impoverished impression, and farmers complained about shortage of land forcing them to work far from their families as labourers. In the village the first temporary topographic clay model was built in 1992. In May 1998 just before TG-HDP completion a new one was built with polystyrene. The model has not been completed and is thus of limited use (Figure 4).

The PhD research compared an aerial view of the village (Figure 5) with a sketch map drawn by villagers and translated into English, to document land classification as well as the potential to integrate the village map into a GIS environment (Figure 6). Informants located permanent fields labelled as Sustainable Farming Systems (SFS) - a legacy from the TG-HDP extension campaigns - at the centre and marked rice fields and cattle grazing areas in brown and grey respectively. The map shows the influence of the CLM approach in terms of area demarcation, contour lines and outer village (user) boundary. Interestingly the fact that some fields were located outside this boundary was not an issue for villagers, as the implications of the existence of a boundary were not sufficiently clear to them. As it stands, the data dis-

played on the map are of limited value for inclusion into a GIS, because the delineation of land types is vague. However, the sketch map as it stands, could be used as a starting point for refinement in combination with the topographic model. In this context it would be important to coordinate mapping activities with government agencies to secure a certain degree of sustainability for such an approach.

In the current situation, where all suitable land is already under cultivation, and in the absence of a local extension agency that could support the updating of the model, as well as the unofficial status as a satellite village, topographic models and digitised maps do not seem to be of any use for farmers.

The fact that villagers have not outlined land use on the model is likely due to a mixture of inability to do so without external support, and the perception that the model may be of limited use in solving their immediate problems. In this context, the assistant headman mentioned the dependence on the *key village* for all official matters as a concrete hindrance, since the village has no direct voice when seeking support from government extension services at TAO meetings.

Bor Krai village (Tambon Pang Ma Pha)

The Lahu Sheleh village of Bor

Krai (class 2, potential for permanent settlement according to DLD, 1994) has been inhabited for 20 years. It has a population of 170 and was registered in 1996 as *key village* No. 11 (DOLA, 1996). The villagers of Bor Krai migrated to the new location from their original village of Cho Bo in 1978. Initially Bor Krai was a satellite village of Cho Bo and gained full status when it was registered and given some land from its area of origin.

Some villagers still have land in the old village, but officially this land is lost as it lies outside the current village boundary. The village is located at the northern tip of the Pai Wildlife Sanctuary. This means that according to RFD the village should not exist and the establishment of paddy fields is forbidden. Nevertheless, the village is included on the Tambon model (Figure 7).

In contrast to the Tambon model, the digitised village map based on the village model, omits some land to the East (Figure 8), and official boundaries go beyond what the villagers have outlined. The village committee reacted with positive surprise to this finding. The display of the map generated discussions as to why the TG-HDP had not included the data on the model earlier. On the other hand, the fear of land confiscation by RFD persisted.



Photo by Oliver Pugmiller

Figure 7. Bor Krai village on the Tambon model (village No. 11)

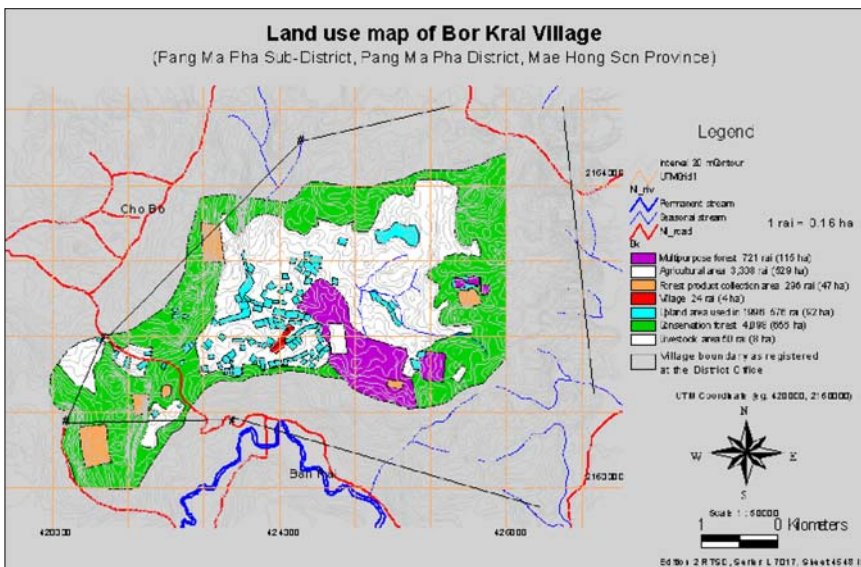


Figure 8. Land use map of Bor Krai village

According to a survey done in 1997 by the RFD district office, 179 ha of upland were used in 1996 or nearly double the measured value of 92 ha from the digitised village map. Farmers explained this discrepancy as a strategy to keep as much farmland as possible. Villagers expected land confiscation by RFD based on this survey, so by indicating more used land than in reality, they could secure enough even after confiscation to secure a livelihood. This shows that villagers feel that they have no land security and continue to live in a state of uncertainty. In order to demonstrate

its willingness to preserve natural resources, the village has strict rules for natural resource management that include the imposition of fines for felling trees and hunting within the conservation forest.

On one hand according to RFD, the village is located within a wildlife sanctuary, thus it is illegal; on the other hand the settlement is officially registered with DOLA. These overlapping and contrasting destinations clearly indicate lack of legislative coordination among concerned ministries. In this context, mapping (in its different forms) acquires new roles as instruments

for visualizing conflict, negotiation and conflict resolution.

An assessment of participatory mapping

The combination of topographic models with digitised maps highlighted the following controversial issues:

- Who should update land use maps?
- To what extent is this a participatory process?
- Does land use mapping lead to unfavourable scenarios for concerned communities (i.e. land confiscation for reforestation)?
- Is a legal framework necessary for these tools to be used for scaling up land use planning at the Tambon level (Figure 9)

The issue on local concerns has been considered to the extent that each village as a whole agreed on land categorisation and boundary outlining, which for planning purposes is a step forward from rough sketch mapping without scale and geographic references. On the other hand, updating digitised maps is beyond the control of villagers and requires the involvement of planning agencies and regular consultation. Boundaries with neighbouring villages tend to be less of a conflicting issue, as the village committees can enter into agreements.

However, for fields located outside the boundary, villagers are resigned to the fact that these will eventually be lost. Villagers expressed their willingness to set aside a large part as conservation forest in line with government reforestation interests, usually twice as much as the agricultural area. The inclusion of the boundary drawn by DOLA for village registration purposes attracted substantial attention, because none of the villagers had ever received any map showing it. When the boundary had been

added to the drawing, their fears of losing land had increased. In the future, government agencies may only recognise DOLA boundaries, disregarding those identified by the villagers. In addition, the population will grow and new villages will be formed, so taking land from the old villages to allocate it to new ones will continue. It would be important to have a standard transparent procedure, but to date such procedure does not exist, leaving room for conflict.

There are various shortcomings on the government side. RFD refuses to recognise the land delineations done by villagers and keeps on confiscating land; and DOLA that does not consider community-defined boundaries when registering villages.

This situation undermines the purpose of participatory planning and land demarcation, for there are no concrete policy guidelines towards which the process can be

oriented. This also applies to the access of hill tribes 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, which has led, in some cases, to land confiscation by the Royal Forest Department and the provincial Governor. Such interventions are not backed up by policy other than the restrictive watershed classification. The persistent threat of land confiscation, though justified when there is encroachment into demarcated conservation forest areas, inhibits farmers from planning for the long term. This also refers to one of two preconditions set by FAO for planning to be useful, that is, the political will to put plans into effect. This precondition appears to be lacking as of the writing of this report, thus undermining a stable local planning platform.

Conclusion

Within the geographical scope of this study, a number of practical difficulties emerged once hill tribe farmers were called upon using topographic models and digitised maps without external support. Such tools are useful only if clear goals are set and allow for a certain degree of communal forest management by villagers, which after more than a decade of political debate is still an elusive perspective. The policy framework needs to be reformed to find a compromise between forest protection and agricultural subsistence, and to create a link between national priorities and applications both at the village and Tambon levels. Agreements between villages and government agencies can be made by local Tambon Administrative Organisations (TAO) with their mandate for natural resource management. In the Mae Chaem district of Chiang Mai, a notable positive example has been set by CARE, a



Photo by Oliver Puginier

Figure 9. Combination of digitised map and topographic model

non-government organisation that has worked with 3-D models and digitised land use maps in combination with written land use agreements signed by village leaders and government representatives in specially created watershed committees (Srimongkontip, 2000). The success hinges on the long-term commitment of CARE, combined with the integration of village land use classifications and key government agencies as members of these watershed committees, which seems to have created a relatively stable platform for land use planning. This is still of an informal nature and is the only known case in Thailand that has reached that far. It should however serve as an encouragement that the above approach may not be completely unrealistic, even without a legal policy basis.

One potential to deal with these differing priorities at the Tambon level could evolve from the current restructuring project of the Ministry of Agriculture and Cooperatives (MOAC), which is part of the ongoing process of decentralisation. Part of this reform has been the introduction of Technology Transfer Centres (TTC) in 1998 with 82 TTCs established nationwide by the Department of Agricultural Extension (DOAE). The initiative aims at covering all Tambons in the next few years (GTZ, 2001). There are plans to link the new TTCs with the TAOs, of which all registered villages are members. TAOs are intended to become the major conduit of funds and resources, though the details of responsibilities are still being developed.

Currently topographic models are more suitable for planning and easier to update, but should TTCs be properly established and highland policies harmonised, digitised maps will gain importance. How the exposure of inconsistencies can facilitate this process, remains to be seen. ■

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References

- Abbot, J. et al.** 1998. Participatory GIS: opportunity or oxymoron? In: *PLA notes* 33, International Institute for Environment and Development (IIED), London, pp. 27-34
- ADB**, 2000. Addressing the Health and Education needs of Ethnic Minorities in the Greater Mekong Sub-Region. Asian Development Bank (ADB), Thailand Country Report, Research Triangle Institute (RTI), Chiang Mai
- Amornsanguansin, J.** (1992) Thailand Forest Policy and Extension. In: *Local Organisations in Community Forestry Extension in Asia*. FAO Field Document 34, Bangkok
- Borsy, P. and M.V. Eckert**, 1995. CLM guidelines in brief. Thai German Highland Development Programme (TG-HDP), Chiang Mai, Internal Paper Nr. 189
- Dam, C.V.** (2000). Two decades of participatory forest development... but how participatory? *Forests, Trees and People Newsletter* No. 42, FAO Community Forestry Unit, Rome, pp. 11-17
- DLD**, 1994. Land Development Book for the Highlands, Mae Hong Son Province. Department of Land Development, Bangkok (in Thai)
- Dola**, 1996. Village registration and area demarcation. Department of Local Administration, Office of the Governor, Mae Hong Son Province, 2 May (in Thai)
- FAO**, 1993. Guidelines for Land-Use Planning. FAO Development Series 1, Rome
- Ganjanapan, A.** 1997. The politics of environment in northern Thailand: Ethnicity and highland development programs. In: Hirsch, P. (Ed. 1997): *Seeing Forests for Trees: Environment and environmentalism in Thailand*. Silkworm Books, Chiang Mai, pp. 202-222
- Ganjanapan, A.** 1998. The politics of conservation and the complexity of local control of forests in the northern Thai highlands. *Mountain Research and Development*, Vol. 18, No. 1, pp. 71-82
- GTZ**, 2001. Community-Based Agricultural Development: Challenges for the MOAC, vol. 3, Bangkok
- Jantakad, P. and D. Gilmour**, 1999. Forest rehabilitation and practice in Thailand. Proceedings of the workshop on the "Rehabilitation of degraded forest ecosystems in the lower Mekong basin: assessments of rehabilitation policy and practice in Thailand". 24-25 November, Chiang Mai, pp. 75-113
- Kaopatuntip, S.** 1998. Breaking the vicious cycle. Bangkok Post, 19 April, Perspective, p. 1
- Kliemkeit, U.** 1999. The Process of Implementing Fruit Cultivation in the Thai Highlands. MSc thesis, Humboldt University Berlin
- Maxwell, J.F.** 1997. Brief History of Northern Thai Forests: Present and Future. Presentation at the Informal Northern Thai Group meeting on 8 April 1997, Alliance Française, Chiang Mai
- Nelson, M.H.** 2000. Local Government Reform in Thailand. Center for the Study of Thai Politics and Democracy, King Prajadhipok's Institute, Bangkok
- NESDB**, 1997. The Eighth National Economic and Social Development Plan (1997-2001). Website: www.nesdb.go.th/New_menu/plan8e
- Pragtong, K. 1993. Institutional and administrative aspects of forest policy implementation in Thailand. In: *Policy and Legislation in Common Forests*, RECOFTC Report No. 11, Bangkok, pp. 115-119
- Rerkasem, K. and B. Rerkasem**, 1994. Shifting cultivation in Thailand. International Institute for Environment and Development (IIED), London
- Renard, R.D.** 1997. The making of a problem: narcotics in mainland Southeast Asia. In: McCaskill, D. and Kampe, K. (Eds.): *Development or Domestication? Indigenous Peoples of Southeast Asia* Silkworm Books, Chiang Mai, pp. 307-328
- RFD**, 1993. Thai Forestry Sector Master Plan (TFSMP), vol. 1-7. Royal Forest Department, Bangkok
- RTG**, 1997. Second Master Plan for Highland Development and Narcotic Crops Control. Bangkok (in Thai)
- Srimongkontip, S.** 2000. Building the capacity of watershed networks to resolve natural resource conflicts: Field experiences from the CARE Thailand Project, Asia-Pacific Community Forestry Newsletter, vol. 13:2, Bangkok, Website: www.mekonginfo.org
- Tangtham, N.** 1992. Principles and application of watershed classification in Thailand. Paper presented at the Training Course on Natural Resource Management and Conservation in Watershed Areas, 7.9.- 11.12, Asian Institute of Technology, Bangkok
- TG-HDP**, 1998. Review of TG-HDP's Agricultural and Forestry Programmes, 1984-1998, vol. 1 and 2. Thai-German Highland Development Programme (TG-HDP), Chiang Mai, Internal Paper Nr. 212