VOLUME 1

REVIEW OF TG-HDP'S AGRICULTURAL AND FOREST PROGRAMMES WITH SPECIAL REFERENCE TO COMMUNITY BASED LAND USE PLANNING AND LOCAL WATERSHED MANAGEMENT (CLM)

May 1998

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LIST OF ABBREVIATION

ATT Agricultural Training Team
BAAC Bank of Agriculture and Agricultural Cooperative
CB-DAC Community Based Drug Abuse Control
CB-NRM Community Based Natural Resource Management
CDC Community Development Coordinator
CLM Community Based Land Use Planning and Local Watershed Management
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CMO</td>
<td>Chiang Mai Office</td>
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<tr>
<td>CTs</td>
<td>Contact Teams</td>
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<tr>
<td>DCD</td>
<td>Department of Community Development</td>
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<td>DLD</td>
<td>Department of Land Development</td>
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<td>DLO</td>
<td>District Livestock Office</td>
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<td>DOAE</td>
<td>Department of Agricultural Extension</td>
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<td>DOF</td>
<td>Department of Fisheries</td>
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<td>DOLA</td>
<td>Department of Local Administrative</td>
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<td>DPW</td>
<td>Department of Public Welfare</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GIS</td>
<td>Geographical Information System</td>
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<td>GOs</td>
<td>Government Organizations</td>
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<td>GTZ</td>
<td>Deutsche Gesellschaft für Technische Zusammenarbeit</td>
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<td>HAEH</td>
<td>Highland Agricultural Extension Handbook</td>
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<td>HASD</td>
<td>Highland Agriculture and Social Development</td>
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<tr>
<td>HDP</td>
<td>Highland Development Project</td>
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<tr>
<td>HDWC</td>
<td>Hilltribe Development and Welfare Centre</td>
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<tr>
<td>HDWU</td>
<td>Hilltribe Development and Welfare Unit</td>
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<tr>
<td>HPL</td>
<td>Huai Poo Ling</td>
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<tr>
<td>ID</td>
<td>Identification Card</td>
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<td>IP</td>
<td>Internal Paper</td>
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<tr>
<td>HRD</td>
<td>Human Resource Development</td>
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<tr>
<td>IRRI</td>
<td>International Rice Research Institute</td>
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<td>KBC</td>
<td>Karen Baptist Convention</td>
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<td>LDD</td>
<td>Livestock Development Department</td>
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<tr>
<td>LDU</td>
<td>Land Development Unit</td>
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<tr>
<td>LUFC</td>
<td>Land Use Planning Field Coordinator</td>
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<td>LUPAs</td>
<td>Land Use Planning Assistants</td>
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<tr>
<td>LUPC</td>
<td>Land Use Planning Coordinator</td>
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<tr>
<td>LUART</td>
<td>Land Use Planning Team</td>
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<tr>
<td>MTHC</td>
<td>Modern Thai Highland Community Development</td>
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<td>MTF</td>
<td>Mae Hong Son Task Force</td>
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<td>NGO-cord</td>
<td>NGO Coordinating Committee for Rural Development</td>
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<tr>
<td>NGOs</td>
<td>Non-Government Organizations</td>
</tr>
<tr>
<td>NL</td>
<td>Nam Lang</td>
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<tr>
<td>NRM</td>
<td>Natural Resource Management</td>
</tr>
<tr>
<td>NWFPS</td>
<td>Non Wood Forest Products</td>
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<td>OFF FARM</td>
<td>Off-farm Income Promotion</td>
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<td>ONCB</td>
<td>Office of the Narcotics Control Board</td>
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<td>PLP</td>
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As a long running project, such as the Thai-German Highland Development Programme (TG-HDP) nears its completion date, it is both appropriate and potentially fruitful for all the partners who have been involved in the project to review and reflect on its implementation. In particular, on the goals and strategies that were first defined, how these have been modified over time in response to experience and an evolving politico socio-economic environment and what have been the outcomes at different stages during the project life.

This review focuses on agricultural and forestry components. Complimentary reviews have been written for other project components such as Community-based Drug Abuse Control and Off-farm Income Promotion, whilst comprehensive reviews of project tools and strategies such as Human Resource Development, Participatory Planning Monitoring and Evaluation and Participatory Working Approach have also been produced. The emphasis during this final phase has been for the field staff themselves, the actual hands on development agents, to prepare most of these reviews and the case studies which are included.

During the final phase of the project, 1994-98, the agricultural support has largely been integrated into the Community-based Land Use Planning and Local Watershed Management (CLM) programme. This review briefly examines the evolution of project approaches in the agricultural sector, from the earliest phase of supporting cash crop promotion as an alternative to opium poppy cultivation, through the Soil and Water Conservation (SWC) and subsequent Sustainable Farming, Systems (SFS) approaches.
However, it concentrates mainly on the CLM programme, its objectives, implementation strategies and outcomes both in general and in the form of specific case studies. The Nam Lang area in Pang Ma Pha district contributes most of the examples quoted as it has been the area where the project has been most involved for almost all of the project life and where the most profound case studies have been conducted. Project involvement in the other 2 areas has either been phased out (Tambon Wawi) or commenced much later (Tambon Huai Poo Ling).

CHAPTER I

INTRODUCTION OF TG-HDP

Establishment of TG-HDP

A Regional Rural Development Programme

TG-HDP was established in 1981 under the GTZ (1) development concept of Regional Rural Development (RRD). This concept defines a process of economic and social change for which responsibility is assumed by the host government and the donor government contributes funds and expertise to assist in the identification of development bottlenecks which are overcome through a combination of suitable measures. RRD guiding principles emphasise:

- a focus on people. They must want RRD measures and participate in planning and implementation
- an action radius. Rural development is promoted in a region where the natural environment and habitat of population groups are relatively uniform
- measures which are systematically networked. The integration and interaction of different measures to achieve a more enhanced development process.

Project Target Areas

The first year of the project began as an introductory phase. Tambon Wawi (TW) was selected as the first project area and a 1 year Orientation Phase commenced in October 1981 and defined a 5 year Implementation Phase (1982-87). For the second project area, Nam Lang (NL) a 2 year Orientation Phase ended in September 1984. The subsequent Implementation Phase continued to 1989 when a Follow-up Phase began.

Table 1. Phasing of Activities in TG-HDP Project Areas

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<tbody>
<tr>
<td>Tambon Wawi</td>
<td></td>
<td>OP</td>
<td>Implementation Phase</td>
<td>Follow-up Phase</td>
</tr>
<tr>
<td>Huai Poo Ling</td>
<td></td>
<td>OP</td>
<td>Implementation Phase</td>
<td>Post-Project Activities</td>
</tr>
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</table>

The 2-year Orientation Phase of the 3rd project area, Huai Poo Ling (HPL), began in 1991 and a 5 year Implementation Phase has run through to the end of the project.

The selection of Tambon Wawi and Nam Lang areas in different provinces (Chiang Rai and Mae Hong Son respectively) was based on accessibility, opium poppy production and local administration. TW was more accessible with a higher population density than NL. Both had considerable poppy production, encompassed several different minority ethnic groups and were contained within a single Tambon (sub district) administrative unit. Since the project began, these conditions have changes substantially, particularly in NL where the population has increased from some 6,000 to over 15,000 persons and the Pang Ma Pha administrative unit within which NL is located has been successively upgraded to branch district (1987) and full district (1996) status.
Huai Poo Ling was selected more for reasons of remoteness and limited services than opium POPPY cultivation. Only one ethnic group lives in the area. Although its present administrative status is that of a single tambon, it has been proposed for upgrading to branch district status.

The overall project itself has been implemented in a number of phases as agreed by the respective governments. The first phase ran to October 1987, a second Promotion Phase extended operations until September 1990, the third phase until September 1994 and the Final Phase, and with it TG-HDP, will be completed in September 1998.

The TG-HDP is jointly executed by the Office of Narcotics Control Board (ONCB) and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) on behalf of the Royal Thai and German governments respectively. Five main Thai ministries (Interior, Agriculture and Co-operatives, Labour and Social Welfare, Education and Health) are directly involved. In accordance with Royal Thai government (RTG) policy on decentralisation of rural development, the TG-HDP plans and implements its activities in close collaboration with provincial, district and sub-district (tambon) agencies and bodies, non-government organisations (NGOs) and the private sector. The involved departments and organisations are designated Responsible Implementing Agencies (RIAs)

**Overall Changes in the Highlands during the course of TG-HDP**

The period 1981-98 has seen dramatic changes taking place in the Thai nation as a whole. For 10 years from 1987, the Gross Domestic Product (GDP) increased by more than 8% annually. This has been due in part to large amounts of foreign investment and industrialisation which has lead to a massive diversification of the economy in both the urban and rural sectors. Large increases in government budgets have been possible and these have been used to improve the provision of infrastructure, basic services and general development funding. These events have had profound repercussions for the highland people, the areas they inhabit and the goals and strategies of projects such as the TG-HDP.

It is noteworthy that concern for ecological balance has been consistent since the beginning of the project.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Project Goal</th>
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<tbody>
<tr>
<td>I</td>
<td>To devise and implement a strategy to improve the social, economic and ecological situation in the communities</td>
</tr>
<tr>
<td>1981-86</td>
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<tr>
<td>II</td>
<td>To improve the standard of living of the highland population, and at the same time maintain a better ecological balance</td>
</tr>
<tr>
<td>1987-90</td>
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</tr>
<tr>
<td>III</td>
<td>To continue to improve the standard of living of the highland population and at the same time maintain a better ecological balance, plus the reduction of drug abuse problems</td>
</tr>
<tr>
<td>1991-94</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>The quality of life of the highland population is improved, the drug abuse problems are reduced and the ecological balance is maintained better</td>
</tr>
<tr>
<td>1995-98</td>
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</tbody>
</table>

In the early 1980s, most highland villagers lived on the fringes of Thai society with only limited interaction with the lowland and central Thai authorities. Few of the highland people had citizen ship, their villages generally had poor access and most lacked basic services such as schools and health stations. Government priorities mainly related to concerns over national security and opium poppy production, as indicated in Table 3. Subsequently, concerns over their marginalised status, environmental degradation, drug abuse and income inequality were integrated into highland development programmes. The earliest Masterplan,
which was jointly developed by ONCB and UNFDAC (3) in the mid 1980s, identified consolidated areas of high opium poppy cultivation and proposed integrated highland development projects with international funding support to be implemented as the means to reduce the poppy problem. Most of these projects, such as Sam Meun HDP, Pae Por HDP, Doi Yao HDP, Thai-Norwegian Church Aid HDP were subsequently implemented.

Table 3: Changes in Highland Conditions, Policies Strategies and Outcomes 1982-1998

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<thead>
<tr>
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<tbody>
<tr>
<td>PERCEIVED PROBLEMS</td>
<td>National security</td>
<td>National security</td>
<td>Drug trafficking</td>
</tr>
<tr>
<td></td>
<td>Drug production</td>
<td>Drug production</td>
<td>Drug abuse</td>
</tr>
<tr>
<td></td>
<td>Political stability in remote areas</td>
<td>Environmental degradation</td>
<td>Environmental degradation</td>
</tr>
<tr>
<td></td>
<td>In-migration from neighboring countries</td>
<td></td>
<td>Income inequality (VIZ Lowlanders)</td>
</tr>
<tr>
<td>POLICY PRIORITIES (+ BUDGET ALLOCATIONS)</td>
<td>Infrastructure basis services</td>
<td>Infrastructure basis services</td>
<td>Expansion of official villages</td>
</tr>
<tr>
<td></td>
<td>Basic services</td>
<td>Forest regeneration</td>
<td>Increase income generating opportunities</td>
</tr>
<tr>
<td></td>
<td>Alternative cash crops</td>
<td>Conservation farming/cash crops</td>
<td>Drug abuse control</td>
</tr>
<tr>
<td>Limited RIA budget Project major funder of development activities</td>
<td>Citizenship</td>
<td>Environmental protection local/forest regeneration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Integration into Thai security</td>
<td></td>
<td>De-centralisation/local community involvement</td>
</tr>
<tr>
<td>1st Masterplan (UNFDAC-ONCB) increasing RIA budgets</td>
<td></td>
<td></td>
<td>Rapidly increasing RIA budgets 2nd and 3rd Master-plans for highlands</td>
</tr>
<tr>
<td>ACTIVITIES - WORKING APPROACH</td>
<td>Build</td>
<td>Roads, schools, health stations</td>
<td>CB-DAC</td>
</tr>
<tr>
<td></td>
<td>Trust and confidence</td>
<td>SWC programme</td>
<td>CLM</td>
</tr>
<tr>
<td></td>
<td>Roads</td>
<td>Modern Thai Highland Community Development (MTHC)</td>
<td>OFF-FARM</td>
</tr>
<tr>
<td></td>
<td>Schools</td>
<td>Involvement of villages through problem census meetings</td>
<td>RFM</td>
</tr>
<tr>
<td></td>
<td>Health station</td>
<td></td>
<td>Participatory working approach with community organisations/groups</td>
</tr>
<tr>
<td>Demonstrate/extend cash crops provision of services planned by RIA project</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>ROLE OF RIAs (INCLUDING PRIVATE SECTOR)</td>
<td>Plan improved service, make provision for ongoing running costs, staffing etc., fund infrastructure as per available budget</td>
<td>Expand basis services to more remote villages</td>
<td>Continue to expand services as budgets and staff increase</td>
</tr>
<tr>
<td></td>
<td>Work with TG-HDP on special programmes eg. SWC/MTHC</td>
<td>Work with TG-HDP on special programmes eg. SWC/MTHC</td>
<td>Start to pay more attention to qualitative/impact aspects</td>
</tr>
<tr>
<td></td>
<td>Expansion of private sector especially where cash crops grown</td>
<td></td>
<td>Initially reduce cooperation with project (enough budget): later wish to gain from experiences</td>
</tr>
<tr>
<td>As RIA funds increase, less perceived need to cooperate with project</td>
<td>Expand private sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROLE OF PROJECT/ORGANISATION</td>
<td>Assist RIAs in planning and provision</td>
<td>Assist RIAs in planning and training</td>
<td>Develop approaches/strategies</td>
</tr>
</tbody>
</table>
During the first period, 1982-86, the TG-HDP mobilised Contact Teams (CTs), young men and women who worked closely with villagers to identify basic needs and through partner RIAs implement activities accordingly to the principle of building trust and confidence. Most activities were concerned with infrastructural development and the expansion of basic services, particularly in the fields of health and education. Improved varieties of subsistence crops were demonstrated and new cash crops introduced. The Contact Teams fed village basic need requirements into detailed planning exercises with the RIAs. At this time, the project funded most of the activities in the target areas.

<table>
<thead>
<tr>
<th>OF PROJECT</th>
<th>of services and training</th>
<th>based on PWA</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>• Fund infrastructure as necessary</td>
<td>• Dissemination</td>
</tr>
<tr>
<td></td>
<td>• Support extension of cash crops</td>
<td>• Strengthen local organisation</td>
</tr>
<tr>
<td>Chiang Mai base, field stations Contact Team</td>
<td></td>
<td>MTF, CMO, Area Teams, PWA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INTERACTION WITH/PARTICIPATION OF VILLAGERS</th>
<th>• Some involvement of villagers in planning activities via Contact Team</th>
<th>• Villagers involved through problem census meetings however activities in solve problems largely planned and implemented by field and RIA staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planning implementation with community groups</td>
<td>Increased use of community/tambon budgets/fund</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTCOMES AT (IMPACT) VILLAGE LEVEL</th>
<th>• Improved government services</th>
<th>• Increase &quot;outside&quot; influence services (including private sector)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Outside influence</td>
<td>• High adoption of extended practices eg. SWC</td>
</tr>
<tr>
<td></td>
<td>• Undermined confidence in traditional</td>
<td>• Emergence of young Thai fluent leaders, as expense of traditional leaders</td>
</tr>
<tr>
<td></td>
<td>• Increased reliance on value outsiders especially RIAs</td>
<td>• Increased range of income sources</td>
</tr>
<tr>
<td></td>
<td>• Permanent settlement</td>
<td>• Increased number with citizenship</td>
</tr>
</tbody>
</table>

|                                            | • Increased leadership abilities and self confidence | • Drug free villages, increased community forest etc., |
|                                            |                                                  | • Network groups |
|                                            |                                                  | • Tambon involvement and management |

During the first period, 1982-86, the TG-HDP mobilised Contact Teams (CTs), young men and women who worked closely with villagers to identify basic needs and through partner RIAs implement activities accordingly to the principle of building trust and confidence. Most activities were concerned with infrastructural development and the expansion of basic services, particularly in the fields of health and education. Improved varieties of subsistence crops were demonstrated and new cash crops introduced. The Contact Teams fed village basic need requirements into detailed planning exercises with the RIAs. At this time, the project funded most of the activities in the target areas.

The Modern Thai Highland Communities concept provided both the target population and developers with a clearly described vision and practical guidelines on where the development process should lead and how it should be implemented. The main objectives of the MTHC were:

- to encourage the target population to participate in improving the quality of life in the community and to instill in the hill tribe people an understanding about Thai citizenship
- to enable local groups and organisations to be self reliant and self-sufficient within their means and the realities given by economic and social highland structure
- to provide public health and education services throughout the areas, as well as to improve the necessary infrastructures, so that the highland population has a better condition of living and is better connected to the surrounding region
- to encourage the target population to adopt appropriate environmental conservation practices as well as to sufficiently mobilise economic resources
The second period, 1987-93, saw the development and introduction of 2 significant project components, the Soil and Water Conservation (SWC) programme and the Modern Thai Highland Communities (MTHC) approach. The SWC programme (which will be described and discussed in more detail later) was a concerted effort to introduce a package of measures to development a permanent cropping system on hillside fields. The MTHC approach represented a resource optimising socio-economic development approach. For both SWC and MTHC handbooks were produced and the main role of the project was to assist RIAs through planning exercises and training to implement programmes and activities accordingly.

A specific Agricultural Training Team (ATT) was organised for implementation of the SWC programme.

The Agricultural Training Team was a working group responsible for the training of field staff in project areas in accordance with the Highland Agricultural Extension Handbook (HAEH). The team prepared HAEH curriculum, training (and other HRD methods), monitoring and evaluation of results together with agricultural officials at district and provincial levels.

During this second period, and in tandem with the international development of participatory methods and tools, it was realised that to achieve further improvements in the management skills of community leaders and groups that more participatory working approaches were needed. Experience had indicated that following the development of annual workplans, RIA implementation was often constrained and carried out in a manner which involved little participation of the target villagers.

After 1990, the SWC programme evolved into a Sustainable Farming Systems (SFS) approach which included support for livestock husbandry, fruit tree orchards and paddy development and more involvement of farmers in considering which options and elements of SWC they wished to implement. Concurrently, the Community-based Land use Planning and Local Watershed Management (CLM) concept was proposed and initiated on a pilot scale.

The final period, 1994-98, included decentralisation of project management with the formation of the Mae Hong Son Task Force (MTF) in Mae Hong Son and Area Teams in Nam Lang and Huai Poo Ling. A Participatory Working Approach (PWA), based on the principles of Rural Systems Analysis (RSA) was introduced via training exercises and regular inputs from short term consultants. Although RIA participation in PWA has been fully encouraged, the primary responsibility for implementation has rested with TG-HDP field and specialist support staff.

Rural Systems Analysis is an attempt to acquire better knowledge and a more complete picture of the rural system through surveys of the village community and its people.

RSA looks at each of 5 factors with regard to village development.

1. History of village - settlement, composition homogeneity, conflicts etc.
2. Natural resources - potential/limitations, use by whom
3. Man-made resources - what, who made/acquired, uses
4. Groups - existence, evolution, members/beneficiaries
5. Leaders-Traditional Leader/Formal Leader etc.

RSA Tools and Steps:

- Community level data collection
  - available secondary data
  - village generated maps
- Household level data collection
  - family activities (chart)
  - family structure
  - labour calendar
- Data analysis
  - tables based on data collected
  - multi-disciplinary team approach
- Village development strategies
  - prepared by field workers as basis for interaction with villagers
- Information feedback
  - from field workers to villagers
  - interaction initiated

Following on from RSA, group formation and development has been the key strategy to achieve participation. The assumption is
that existing and newly formed groups have the potential ability to address particular issues with clear group objectives. Three stages are identified and followed as part of the group development process.

**Figure 2. Groups and Group Process**

**Pre-group:**
interaction and discussion of real development needs leading to grouping of villagers based on their common concerns

**Learning group:**
improvement of knowledge and skills of group members

**Activity group:**
Preparation of group management prior to the implementation of activities

The final period reinforced the application of several tools and components developed during the earlier periods. Human Resource Development (HRD) had long been recognised as being the key to the overall highland development process and had been refined as being much more than the provision of training. Increasingly, the facilitation of exchanges of experience between villagers in the form of study tours and networking

The project's extensive PM&E system consists of various tools for data collection, planning, monitoring and evaluation. In part, the system is used as an internal tool by the project to organise its own tasks. The target populations are also encouraged and equipped to plan their own development activities present such activity plans for consideration at sub-district and higher levels. Assistance to RIA staff in systematic monitoring and evaluation aims to develop analytical skills, whilst at community and sub-district levels the enhancement of self-reliance is a further aim. Apart from SFS and CLM, Community Based Drug Abuse Control (CB-DAC), Off-farm activities, which provide alternative opportunities for income generation and the enhancement of Rural Financial Management (RFM) services and skills comprise the main project programmes during the final phase.

The Overall Goal for the Final Phase (1994-98) was elaborated as:

- strengthening of village organisations and their participation in joint bottom-up planning, implementation and the effective management of sustainable development measures
- improvement of sustainable subsistence, cash farming and other income generating practices leading to higher family incomes and further reductions in opium poppy cultivation
- conservation, development and efficient utilisation of the natural resources, in particular forest, soil and water
- better use of community-oriented social services and activities leading to improved health and education and a decline in drug addiction and related problems
- strengthening of district, provincial and higher level institutions in improved participatory planning, implementation and management of highland development
- assisting national policy and decision making, resulting in improved framework conditions for the highlands.
CHAPTER II
ORIGIN AND PROGRESSION OF TG-HDP’S AGRICULTURAL
AND FORESTRY PROGRAMMES, 1984 1994

Agriculture and Forestry in Nam Lang Area - 1984

A baseline survey was carried out in Nam Lang area in 1983. This identified 38 villages and a population of 6,085 persons living in 1,013 households. Most villages lacked drinking water, only 8% of children aged 7-15 years old attended schools and only 6% of households had latrines. Average land holding per household was 13 rai with 35% of households growing sufficient rice for consumption. The average value of crop production was estimated at Baht 5,434 per household and 41% of households were found to be in debt.

Two studies were carried out during early 1984 to review agriculture (4) and forestry (5) in Nam Lang area. A Goal Orientated Project Planning and Management Approach was used and Problem Trees detailing the cause-effect relationships of major problems in each sector were developed. From the Problem Trees, their analogues Objective Trees (see Annex 1.) stated desirable objectives to overcome the identified problems. Logical Framework Matrices (Logframes) were then developed from the Problem and Objective Trees in consultation with RIA representatives.

Table 4: Cropping Calendar - Nam Lang Area

<table>
<thead>
<tr>
<th>Month</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
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<tbody>
<tr>
<td>Rainfed Crops</td>
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<td></td>
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<tr>
<td>Rice</td>
<td>Soil preparation</td>
<td>Planting</td>
<td>Weeding</td>
<td>Harvesting</td>
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<td>Soil preparation</td>
<td>Weeding</td>
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<tr>
<td>Corn</td>
<td>Planting</td>
<td>Harvesting</td>
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<td>Soil Prep</td>
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<tr>
<td>Poppy</td>
<td>Harvesting</td>
<td>Planting</td>
<td>Harvesting</td>
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</tbody>
</table>

| Irrigated Crops |
| Rice | Soil Prep | Weeding |
| | Planting | Harvesting |
| Garlic | Soil Prep | Planting |
| | Planting | Harvesting |
| | Weeding |
| Vegetables |
| | Weeding |
| | Harvesting |

I. Agricultural Sector

The traditional production systems of the ethnic groups represented in Nam Lang area can be broadly categorised as be based on pioneer swidden cultivation (Lahu, Lisu and Hmong), rotational swidden cultivation (Karen) and permanent paddy cultivation (Shan).
Most of the Lahu and Lisu villages had been established in their present locations for only a few years.

The agricultural situation in project villages at that time can be summarised as follows:

**Field crops:**
- predominantly upland rice for human consumption and maize for livestock feed. Little of either was marketed,
- garlic and sesame were the main cash crops in a few villages. Some villages had recently started growing castor, bean
- limited land irrigated but some potential to extend small scale irrigation schemes, opium poppy extensively grown in almost all villages.

**Tree crops:**
- backyard fruits (banana, papaya) for home consumption. Expressed desire in many villages to improve and increase fruit trees for sale.

**Livestock:**
- all villages raised chickens and pigs; cows, horses and buffalo kept in most villages. Livestock irregularly sold to visiting traders,
- no vaccination or extension programmes. Incidence of disease appeared to be inversely related to isolation; i.e. less disease in more remote villages.

**Fish and frogs**
- although only 1 village had a fish pond, fish and frog raising were considered as feasible enterprises.

The main problems in the agricultural sector were identified as:
- **luck of water**, particularly during the dry season due to poor water holding capacity of the soils and a limited number of irrigation systems
- **lack of suitable agricultural land**, as a result of permanent settlement and increasing population density (due to both the indigenous birth rate and in-migration from Burma), the traditional extensive swidden cultivation systems could no longer maintain long fallow periods. The consequences were identified as reduced renewal of soil fertility and increased weed competition during the cropping phase. Only 12% of the land had been classified by the Department of Land Development as suitable for cultivation
- **lack of alternative technology and extension services** highlighted the need to modify traditional practices and introduce new methods to increase productivity without adversely affecting the local ecology.

At the time of the survey, only 3 RIA officials involved with agriculture were working in the project area. The **Super Goal, Goal and Purpose** as included as part of the Logframe specified improvements to both subsistence and cash crops, an ecologically sound approach and the strengthening of RIA.
services as the means. One assumption was that appropriate technology was available from institutions already working in the highlands and that project assistance with planning and implementation through training and the provision of basic infrastructure and equipment would be sufficient to effect the programme as outlined. The main activities involved the promotion of improved and new annual rainfed and irrigated crops, the promotion of perennial crops, the expansion and upgrading of irrigation facilities, the improvement of techniques for crop storage, the provision of technical information for livestock raisers and for fish and frog production and the conduct of regular farm surveys.

II. Forestry Sector

The Nam Lang area was identified as covering some 881 square kilometres (550,700 rai). Of this, the northern part (approximately 40% of total) was/is designated as Reserve Forest, whilst the southern section (the remaining 60%) was/is part of the Pai Wildlife Sanctuary. Only 3% of the land is fairly flat with slopes of less than 15%, whilst 79% has slopes of more than 35%. Forest was found to cover 82% of the land area.

<table>
<thead>
<tr>
<th>Forest Type</th>
<th>%age Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hill evergreen</td>
<td>13.7</td>
</tr>
<tr>
<td>Dry evergreen</td>
<td>0.1</td>
</tr>
<tr>
<td>Mixed deciduous + teak</td>
<td>28.1</td>
</tr>
<tr>
<td>Mixed deciduous - teak</td>
<td>19.0</td>
</tr>
<tr>
<td>Dry dipterocarp</td>
<td>14.2</td>
</tr>
<tr>
<td>Coniferous</td>
<td>5.7</td>
</tr>
<tr>
<td>Bamboo</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>82.0</td>
</tr>
</tbody>
</table>

Royal Forest Department (RFD) programmes

1. The multiple-use forestry programme was established in 1983 in the reserve forest area with the aim of rehabilitating the forests and improving socio-economic conditions. The main activities were forest protection, village woodlots (250 rai, for which 200 rai received budget support from TG-HDP) and forest tree nurseries (in 2 locations). Two RFD officials were based in NL to manage the programme.

2. A resettlement programme initiated under the Kings Project to relocate 200-250 families from 10 villages in a watershed area in the north-east to land in 2 sites (Wanna Luang and Mae Mu). The role of RFD (in conjunction with other agencies) was to prepare land for paddy production and upland agriculture (8.5 - 10 rai per household). One RFD office from the Watershed Management Division was posted to oversee forestry activities.

3. A sub-unit to effect wildlife protection and conservation in the designated wildlife sanctuary. One forest ranger and 9 trained wildlife guards were responsible.

4. The forest recreation programme involved the establishment of a centre for visitors to the caves at Tham Lod. One RFD officer from the National Park Division was posted as chief of the centre.

The study identified the main problems in the forestry sector as:

*Excessive swiddening and shifting cultivation* due to traditional extensive production systems, limited villager knowledge of
conservation and permanent agriculture, increasing population pressure, lack of land use rights and poor appreciation of the long term benefits of forest resources. The land survey carried out as part of the 1983 baseline study estimated that 2,174 rai of forest was cleared during the 1983 dry season, equivalent to some 2 rai per household.

- forest fires
- illegal tree felling
- soil erosion due to inadequate soil conservation practices, annual cropping on steep slopes and inappropriate road construction
- reduced numbers of wild animals due to widespread illegal hunting and a reduction in forest cover.

The Super Goal, Goal and Purpose stated in the Forestry Logframe were similar to those for agriculture, with the Royal Forest Department (RFD) providing co-ordinated services for forestry activities. These included:

- the establishment of an appropriate extension service for natural resource conservation and associated extension materials
- conduct of a land holding survey and the provision of land titles
- forest fire control through training and equipping villagers
- the training of forest and wildlife protection volunteers

<table>
<thead>
<tr>
<th>Assumptions of NL Forestry Logframe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-migration is controlled</td>
</tr>
<tr>
<td>security in the area is maintained</td>
</tr>
<tr>
<td>non-agricultural income becomes increasingly available</td>
</tr>
<tr>
<td>family planning programmes are effective</td>
</tr>
<tr>
<td>agricultural RIAs provide effective services</td>
</tr>
<tr>
<td>opium cultivation risk increases and price is stable</td>
</tr>
<tr>
<td>RIA staff willing to promote natural resource conservation activities</td>
</tr>
<tr>
<td>RFD land use rights requests approved</td>
</tr>
<tr>
<td>I.D. cards available to people meeting legal requirements</td>
</tr>
<tr>
<td>villagers are willing to participate in RFD activities</td>
</tr>
<tr>
<td>sufficient budget and motivated personnel are provided by the RTG</td>
</tr>
</tbody>
</table>

- reforestation through the establishment of a permanent nursery, forest plantations, village woodlots and trees on marginal land (increasing up to 3,000 rai per year)
- introduction of agro-forestry through demonstration plots and farmer training
- construction of erosion control measures on roadsides and on farmers fields
- management co-ordination by RFD officials with other RIAs.

It is interesting to note that surveys of land for the provision of land titles was an agreed activity at this time.

Implementation: 1984-86

The agricultural and forestry components were planned in conjunction with TG-HDP staff and implemented primarily by the RIAs according to the logframes. However, the constraints, both institutional and those due to remoteness, experienced by the few RIA staff were considerable and the agricultural programme basically managed to do little more than introduce and demonstrate improved crop varieties and tree crops on a fairly limited scale. It should be remembered that during this period road access to Nam Lang from Mae Hong Son, but particularly Chiang Mai was difficult, especially during the wet season.

Co-operative planning with the Royal Forest Department proved particularly elusive. RFD’s concern was mainly limited to reforestation programmes, using local villagers as hired labour and with TG-HDP continuing to provide budgetary support. In effect, the activities proposed in the logframes in 1984 proved to be overly ambitious, especially in terms of the implementation capacities of the responsible implementing agencies in NL.

Soil and Water Conservation Programme: 1987-90 Internal Paper 80 (5) was an important milestone in the evolution of TG-HDP's agricultural and natural resource management programmes. The core hypothesis of this new approach was that the sustainability of shifting agriculture was breaking down due to reduced yields caused by soil erosion and declining fertility. Increasing population and decreasing fallow periods aggravated the problem. Without soil erosion control, the ability to have a permanent farming system in the highlands would be remote.
The SWC programme introduced a fixed package of technical recommendations to overcome these problems.

The Perceived Final Outcome of the SWC programme was that: by farming land under a SWC system, an average hilltribe family could be completely supported by about 15 rai of land. This could be possible only if all the recommendations pertaining to correct implementation were carried out. Use of chemical fertiliser would help maintain yields while soil fertility was built up by undertaking soil improvement activities. Subsistence crops could be rotated with on cropping areas between the strips to provide for self sufficiency and cash crops such as tea and coffee planted along the grass buffer strip would provide the cash income. Grass cut from the buffer strip would provide for cattle rearing. There would be no more need for fallow plots and millions of rai would be able to revert back to forest land as a result. From the humble beginnings of 3-5 rai, SWC plots would soon multiply as farmers realised the benefits from undertaking SWC activities.

Incentive Payments based on Points Assessment System - 1st Year Adopters of Technical Package

In order to extend the package the Highland Agricultural Extension Handbook was produced the Agricultural Training Team formed and an incentive scheme for staff and farmers was introduced. The package was also promoted on the basis that adoption could facilitate the receipt of I.D. cards and the eventual application for and issuance of land use rights.

![SWC Technical Package](image)

The SWC programme achieved impressive results with the incentive scheme instrumental in achieving high farmer participation. Effective and co-operative teamwork, especially between extension workers and TG-HDP staff was achieved.

Various reviews were carried out on the impact and results of the SWC programme (7). It was generally found that the impacts achieved were rather mixed. Adoption was high, but incentives (including the negative use of incentive related to I.D. cards and land use rights by some RIA staff) were considered by all reviewers to have been particularly important in gaining acceptance by farmers. Yields were generally maintained in the SWC plots but this was at least partly due to application offree) chemical fertiliser supplied by the project.
However, one of the significant findings related to the basic assumption that reduced yields are due to declines in soil fertility. It was the problem of weed control and associated insect pests, particularly in upland rice, that was found to limit yield, particularly in households with little labour available. Up to 5 weedings were required on 3 - 4 year SWC plots, compared with only 1 or 2 in the traditional swidden. Some farmers resorted to chemicals or salt to control weeds. Whilst few were able to incorporate a cover crop such as lablab bean or ricebean into their rotation, most farmers considered burning as important in limiting weed and pest competition.

Another significant problem for SWC adopters was the particular species of grass grown in the contour erosion control strips. Congo grass (*Bracharia ruziziensis*) had been chosen mainly due to its dense growth habit and prolific seed production. However, it was found that unless carefully managed, it had a tendency to spread into cropping areas.

At the end of the SWC promotion phase a study of the extension approach used recommended that during the follow up and consolidation period there should be more farmer involvement in evaluating the SWC package and adoption of elements to suit farmers needs.

**Adoption of SWC in 12 Villages in NL Area: (1987-95)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Adopt</th>
<th>Cancel</th>
<th>Remaining</th>
<th>Per Village</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987-90:</td>
<td>300</td>
<td>61</td>
<td>239</td>
<td>14-100%</td>
</tr>
<tr>
<td>1991-92:</td>
<td>35</td>
<td>75</td>
<td>199</td>
<td>0-95%</td>
</tr>
<tr>
<td>1993:</td>
<td>0</td>
<td>15</td>
<td>184</td>
<td>0-95%</td>
</tr>
<tr>
<td>1994:</td>
<td>14</td>
<td>0</td>
<td>198</td>
<td>10-95%</td>
</tr>
<tr>
<td>1995:</td>
<td>61</td>
<td>0</td>
<td>259</td>
<td>15-95%</td>
</tr>
</tbody>
</table>

Subsequently, the approach was modified and training programmes developed and provided for extension workers accordingly.

Simultaneously, the TG-HDP adjusted its core agricultural programme from SWC to Sustainable Farming Systems (SFS).

**Sustainable Farming Systems (SFS)**

Towards the end of the SWC promotion phase, the various reviews carried out reinforced the contention that the highlands constitute a heterogeneous area where a fixed intervention cannot be appropriate for all the minority groups and physical locations. Therefore, having demonstrated and extended a model for permanent agriculture, a farming systems perspective was introduced which expanded the focus to include other farming enterprises according to the needs and desires of the particular village, group and individual household. Activities specifically to support fruit tree plantation, livestock improvement, cash cropping and associated contract farming and the expansion of irrigation infrastructure (much as originally proposed in 1984) have been incorporated.

The involvement of RIA staff, through regular meetings, joint field visits and attendance at planning workshops, continued at a reduced level. This was due to the constraints on the time available to RIA staff for regular interaction at village level together with a departmental standard extension programme strategy and the phase out of SWC cash incentives. The result was an increasingly important facilitating role for TG-HDP field staff in implementing the SFS approach.

The activities encompassed by the SFS programme, particularly in the Nam Lang area, will be described in more detail in Chapter ? and as part of the case studies. However, it is noteworthy that adoption of SWC elements, mainly associated with

A recent series of interviews, carried out in one village with consistent high adoption (8) indicated that the main reason for SWC adoption has always been to clearly mark the plots as cropping areas to minimise any chance that RFD might insist on reforestation.

**Recommended Extension Approach for Follow-up Period**

On completion of implementation using a whole package approach, the need was not for a "transfer of technology" but for a learning and educational process for farmers to be able to develop their critical thinking with which to evaluate the SWC concept and adjust it for their own use. The focus of extension should be develop farmer's participatory abilities to enable them to develop appropriate SWC measures. Without this, the farmers may otherwise revert back to their traditional system, because rice yields would be too low and labour demands too high to be sustainable.
vegetative buffer strips, actual increased in 1994 - 95 from a low in 1993. Although this coincided with the active promotion of Vetiver grass by the Department of Land Development, it has been expressed by farmers that after many years of observation, the value of soil erosion control effected by the strips on semi-permanent cropping areas has been appreciated.

In Huai Poo Ling area, the approach was to establish demonstration sites for farmer evaluation of new techniques such as erosion control measures, cereal - legume rotation and sown fallows and cash crops such as taro, red kidney bean and the grafting of indigenous persimmon. Although there were problems associated with destruction by livestock during the dry season, a number of demonstrations have been developed and served as examples for informal farmer to farmer extension of such techniques. Improvement of livestock production, through the introduction of more productive breeds of cattle, pigs and poultry and group herding of cattle and buffalo has also been facilitated. Sale of livestock constitutes an important source of income for the Karen inhabitants of Huai Poo Ling.

During the final phase of the project when the Community based Land use Planning and Local Watershed Management (CLM) approach expanded from test run villages to all target villages, the SFS programme became increasingly an integrated part of the overall CLM programme.

Community based Land use Planning and Local Watershed Management (CLM)

Since the earliest highland development projects were initiated in the mid-1960s (Royal Project Stations) and early 1970s (UNFDAC funded and Queensland/Chiang Mai Universities co-operation) and through to the late 1980s (HASD/World Bank, Mae Chaem/USAID, Thai-Norwegian/UNFDAC) and including TG-HDP, the strategy in the agricultural sector was based on the introduction, demonstration and extension of new crops and improved varieties to individual farmers or groups of farmers. The target land unit was the individual farmer field. As already briefly described, environmental concerns mainly involved a combination of forest protection and reforestation and the introduction of soil and water conservation measures on agricultural land.

A number of factors and considerations came together in the late 1980s and subsequently led to the development of area or community approaches. As a result and largely in parallel with each other, most of the highland development projects and a number of NGOs developed their own concepts and strategies in accordance with their overall project goals and implementation arrangements.

In the case of TG-HDP, the CLM approach was proposed in 1989 and elaborated and initiated in test run villages during 1990 as described in Chapter 3

Factors Leading to the Adoption of Area or Community Approaches:

- permanent village settlement had led to the need for recognition of community land boundaries
- increasing conflicts between neighbouring communities related to land allocation recognition and use
- conflicts between villagers and RFD over definition of forest and agricultural areas
- the need to consider linking production and conservation, particularly in mini- or micro-watershed areas
- increased recognition of indigenous resource management systems, such as those practiced by the Karen or Lua ethnic groups
- increased use of participatory working approaches

Social Forestry

Review of Forestry Programmes: 1984 - 90

- the limited number of RFD staff was a constraint to following the 1984 work plan
- some of the proposed activities (community wood lots and incentives for agro-forestry) did not have a legal basis
- reforestation using hired labour covered 2,500 rai
- TG-HDP focused mainly on highland agriculture. Development in reserve forest areas had been and continued to be a controversial issue
- until the CLM approach was established, the TG-HDP had not established a clear strategy for the management of off-farm resources.

A social forestry approach within the CLM framework was proposed in 1991(9). TG-HDP's co-operation with the Royal Forest Department was reviewed in relation to the 1984 forestry logframe goals, purpose and activities. In general, co-operation had been limited and the workplan outlined had been overly ambitious. The concentration on reforestation had benefited local villagers as a source of income. Otherwise, interaction between highland villagers and RFD officers during the 1980s was characterised as "open conflict" (10) with RFD policy aimed at restricting land use in reserve forest areas and the reforestation of upland fallow fields, mainly with pine trees. Villagers had no legal access to upland areas and were not considered to have a role in the management of forest resources. In contrast, villagers generally regarded forests as being a free and abundantly available
resource providing land, timber, grazing and forage, and many minor forest products such as herbs, bamboo shoots and mushrooms as and when needed.

**Working Definition of Social Forestry**

Any forestry activities carried out by the villagers for the villagers.

Scope: Activities may range from simple measures of forest protection to active planting and cultivation of trees.

In this context, the TG-HDP social forestry approach focused on the protection of existing forest cover and the introduction of some elements of improved and active forest management, mainly on a community level. The protection of important watershed areas to maintain perennial water flows and the sustainable provision of forest products (timber and non-timber) to meet the needs of the local people have been the main goals of this approach.

Summary of Programmes, Assumptions/Objectives and Approaches and Main Activities of Agricultural, Forestry and Natural Resource Management.

**Table 5: Concepts, Assumptions and Main Activities of the TG-HDP Agricultural Programme**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CONCEPT</th>
<th>ASSUMPTION/OBJECTIVES &amp; APPROACH</th>
<th>MAIN ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry Programme 1984-1987</td>
<td>RIA extension concept</td>
<td>Appropriate RIA concepts are available</td>
<td>New Crops i.e. coffee, red kidney bean</td>
</tr>
<tr>
<td></td>
<td>Crop replacement</td>
<td>To achieve reduction of opium production</td>
<td>Technical recommendation for new crops</td>
</tr>
<tr>
<td></td>
<td>Multiple-use forest</td>
<td>Provision of inputs</td>
<td>Land holding survey, reforestation, village nursery for production of tree seedings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establish appropriate extension service for NRM</td>
<td></td>
</tr>
<tr>
<td>1987-1990</td>
<td>Soil and Water Conservation (SWC)</td>
<td>Soil loss is a main reason for shifting</td>
<td>Buffer strips of grass, Leucaena and pigeon pea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduce and test a permanent cropping system with SWC measures</td>
<td>SWC measures as a package of minimum tillage, zero burning, mulching, early weeding, close spacing, fertilising, crop rotation contour planting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extension of a fixed SWC package</td>
<td>Integration of perennials into SWC plots i.e. growing coffee and fruit trees along buffer strips</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide inputs and incentives to farmers and extension workers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Top down extension approach</td>
<td></td>
</tr>
<tr>
<td>Since 1990</td>
<td>Sustainable Farming Systems (SFS)</td>
<td>Restriction to SWC did not address farmers problems</td>
<td>Optional SWC measures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negligence of other farm enterprises</td>
<td>Subsistant and cash annual and perennial crops development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achieve development of sustainable farming systems</td>
<td>Livestock production development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide more options for potential innovations</td>
<td>Small scale irrigation and paddy rice cultivation development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consider farmer needs and farmer evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Participatory extension emphasis on farmer training farmers</td>
<td></td>
</tr>
<tr>
<td>Since 1990</td>
<td>community Based Land Use Planning and Local</td>
<td>Introduction of permanent farming systems and release</td>
<td>Topographic model building and participatory</td>
</tr>
</tbody>
</table>
CHAPTER III

FOREST POLICY AND COMMUNITY INVOLVEMENT

IN NATURAL RESOURCE MANAGEMENT

Legal Status of Highland Villages One of the main factors affecting highland development throughout the period during which TG-HDP has been operating has been the legal status or otherwise of the mainly ethnic minority group inhabitants. The two main ministries (11) involved are Interior (in particular the Department of Local Administration (DOLA) and Agriculture and Cooperatives (most significantly the Royal Forest Department and to a lesser extent the Department of Land Development). The criteria for legal settlement used by these 2 ministries in many cases do not match and lead to contradictory situations.

Essentially, the aim of DOLA is to progressively encompass all villages into the Thai administrative framework. This has involved encouraging small settlements (of less than 10 households) to join larger nearby villages and a progressive upgrading of satellite villages (those administratively dependent on a core official village) to core village status with its own village headman. As the number of official villages has increased, so new tambons (sub-districts) have been created, and as in the case with Pang Ma Pha, groups of tambons have been formed first into a new branch district, which was subsequently upgraded to full district status. Such administrative changes have been accompanied by the establishment of district offices for most of the main government agencies, a hospital, secondary school and the upgrading of infrastructural facilities such as road and mains electricity. However, as these expansions in legal recognition have occurred on one hand, the land status according to forestry regulations has remained unchanged. In the case of Pang Ma Pha district, little ‘islands’ containing the main town of Sobpong and various administrative units have been created within the area designated as Wildlife Sanctuary.

Forest Law

Thai forest law consists of 2 major parts. The Forest Act, which was issued in 1941 and updated with amendments, including the logging ban of 1989, lays out general policy for forest land, protection of specific tree species (e.g. Teak) and definition of forest utilisation. A section also contains regulations for the issuance of permits for the harvesting of minor forest products.

The Forest Reservation Act, originally issued in 1938, focuses on a planned utilisation of forest resources within designated forest reserves. The section on control and preservation provides for the possibility of settlement by individuals and institutions including provision for family farms for 5 - 30 years. However, another section states that people can be removed from forest land if their interference leads to forest destruction. This Act provides for the provision of land use rights in the highlands.

Wildlife Sanctuary legislation, which is part of the Forest Law, deals with the conservation of areas for the protection of wildlife. No establishment of settlements is allowed within gazetted areas and there are section dealing with the removal of people and prosecution for forest destruction. Areas can only be exempted from wildlife sanctuaries by Royal decree. National Parks have less rigid regulations concerning human activities than wildlife sanctuaries.

A watershed classification (WSC) system was introduced during the 1980s to cover all major catchment areas. The objective of the system is to distinguish between areas to be permanently protected with forest cover and those that can be put to other uses. Topographic 1:50,000 base maps are used with 1 square kilometre cells as the base unit. Several projects (12), including TG-HDP, have found that in practice the WSC system is not too accurate when compared with the actual field situation. Although in the strictest sense the WSC should be used as a planning tool, prior settlement in IA areas has been considered as a basis for
proposing relocation. However, the IA classification does draw attention to zones where resource conservation and agricultural development should be carefully considered.

**Watershed Classification Classes**

- IA: Protected forest on steep slopes
- IB: Land already cleared on steep slopes and should be subject to special conservation measures
- II: Commercial forests, mining, grazing or crop production with soil conservation measures
- III: Less steep and erosive than I & II. Fruit trees, commercial forests, grazing and crop production
- IV: Gently sloping land for row crops, fruit trees. and grazing
- V: Near flat land for paddy and agriculture

Despite the Forest Acts and the role of RFD as protector of national forests, of the estimated 40% of total land under RFD jurisdiction, only some 26% remains as forest. In the mountainous north, forest cover has declined from 60% in 1960 to some 45% in 1997. This rapid decline in the north has been as a result of logging concessions, illegal logging, the expansion of cropping areas into degraded forests, the construction of road and amenities such as resorts as well as shifting cultivation carried out by highland ethnic minorities. In fact, during the past 100 years since its formation, the RFD has not had the resources to enforce the law and this has resulted in a de facto open access to forest resources.

**Emergence of the Involvement of Local Communities**

Forest law has been the subject of considerable debate during the 1990s. The Thai Forest Sector Masterplan (TFSMP) was completed with Finnish and United Nations assistance in 1993. The TFSMP highlighted the fact that in the past forest management had involved a partnership between the RFD and concessionaires who harvested and were supposed to regenerate forests. However, this partnership both excluded and alienated the local people who have always been the largest users of forest resources. By the time that large scale reforestation was promoted, most deforested land was already under the control of local communities. Subsequent to the logging ban in upland and highland areas of 1989, the RFD was instructed to concentrate on forest conservation.

Initial attempts at conservation involved enforcing the existing laws to resettle people from protected areas. This was strongly resisted by with the help of NGOs, who by this time were part of an emerging environmental movement (see below). Private sector involvement in commercial reforestation also proved unpopular with local communities. The TSFMP contended that there was no longer any other way to proceed but by involving local people in forest management. The five forms of partnership proposed emphasised the role of communities in managing their local resources.

**Partnerships Proposed in the TSFMP**

- **State forestry** Management in protected areas in collaboration with local people who are also involved in conservation for their own benefit
- **Community forestry.** Multipurpose forests managed by the communities who already use them
- **Farm forests.** The formal hand-over of deforested state land occupied by villagers which must be sustainably managed for a combination of agricultural and forestry purposes
- **Industrial forestry.** Land already used for forest plantations should demonstrate the productivity of sustainable industrial forest management
- **Urban forestry.** Urban dwellers should be encouraged to develop forests and other green areas.

In order to achieve effective implementation of the masterplan, the importance of social ecological (forest protection, forest-based rural development, watershed management and conservation), technical (forest management, agro forestry, wood and non-wood forest products) and institutional development considerations (policy and legal reform, organisational and human resource development, extension, research, monitoring and evaluation) are emphasised.

Arising out of the TSFMP, the Community Forest Act has gone through several drafts and compromises. The divisions of opinion expressed in the various drafts were not only between the RFD and NGOs and academics, but within the NGO movement between the "environment" and "development" camps. A compromise draft was finally approved by Cabinet in mid-1997, but has yet to gain parliamentary approval.
In its resolution of April 22nd 1997, the Cabinet recognised the right of communities resident in degraded reserve forest areas since before 1993 and managing the occupied resources in a sustainable manner, to apply for legal status. This resolution is broadly in accord with the farmforest partnership proposal of the TSFMP.

In fact, community involvement in forest management is not a new concept, but has been a long tradition in Thailand. However, it is only recently, mainly with the involvement of various NGOs, academics and internationally funded programmes such as the Ford Foundation's Social Forestry Programme, that this tradition has emerged as a viable alternative to the inadequate forest protection through enforcement that has been the policy employed by the RFD.

It is the emergence of this coalition as an environmental movement that has been instrumental in bringing local community concerns to the political forefront. The starting point was probably the Nam Choan controversy in the mid-1980s when concerted public action blocked a scheme which would have flooded undisturbed forest and endangered wildlife. This event encouraged a number of smaller NGOs to organise themselves under the informal umbrella of the NGO Co-ordinating Committee for Rural Development (NGO-Cord). This coalition mobilised again following the 1988 landslides in the south and was instrumental in effecting the permanent ban on all logging concessions in 1989. The 1991 scheme, which included military backing, to resettle villagers from protected areas met determined resistance a similar coalition and was finally dropped. These events have raised national environmental awareness and have resulted in increased support and encouragement for communities to improve and publicise their management of local resources.

In the north, several NGOs, such as CARE International, the project members of NORTHNET (13), the Hill Areas Development Foundation and several YMCA projects have expanded their activities from the promotion of ecologically sound agricultural methods to also support the concept of community forestry as a strategy to solve the problem of deforestation.

As NGO involvement and support for community resource management increased, so did the interest of various other institutions and projects working in highland areas. The notable of these is probably the Upland Social Forestry Pilot project funded by the Ford Foundation and implemented jointly by the RFD in the Sam Meun HDP area and the Resources Management and Development Programme of the Faculty of Social Sciences, Chiang Mai university. This project developed the Participatory Land Use Planning (PLP) concept as an operational process for conflict resolution for application to the issues of natural resource management and development. The goal of PLP is to effect behavioural change through the participation of all concerned parties (stakeholders). Three mini watersheds, encompassing 4 ethnic groups, formed the pilot areas. The project phases were testing (1988-90), implementation (1990-92) and monitoring as the process was extended into other villages in the SM-HDP project area. The main outcome of the PLP process has been improved land management under the responsibility of the villagers.

As will be described in latter sections, although the origins of the CLM programme differ from those of PLP, the outcomes are broadly similar.

The national significance of the PLP process was enhanced following the 1992 restructure of the RFD when the SM-HDP Director was transferred to head the newly strengthened Community Forest Division.

CHAPTER IV
COMMUNITY BASED LAND USE PLANNING AND LOCAL WATERSHED MANAGEMENT (CLM)

Introduction of the CLM Concept

CLM was proposed to the TG-HDP in 1989 as a result of a short-term consultancy (14). A three year proposal for test run activities in 4 villages, 3 in Nam Lang and 1 in Huai Poo Ling was outlined. The main focus of the test run activities in NL was to enhance the further concentration of arable land around the villages and to provide an ecologically and economically sound basis for this on-going activity. The test run villages in NL were selected based on criteria of participation in the SWC programme, permanent settlement with reasonable infrastructure and agricultural areas within sub-catchments according to the DLD watershed classification.

The general objective of area resource management was seen as using the productivity of natural systems to benefit the local people whilst minimising adverse environmental impacts. Mohns emphasised that land use changes are a process and not an event and that the security given by the provision of land use permits was an essential prerequisite for such changes to be accepted by the target population.

A number of working hypotheses for people's participation were outlined. A key element was that strategies must be built on farmers existing motivations
A number of steps for land use planning were recommended. Survey teams, accompanied by one or more villagers would be responsible for carrying out land capability assessment. The emphasis was placed on identifying sufficient suitable arable land in the vicinity of the village and the eventual delineation of a final outer user boundary between this arable land and community managed off farm resources (pasture, forest, protected areas etc.).

Working Hypotheses for People’s Participation in CLM

- the higher the resource value, the more likelihood of user investment in future returns,
- the quicker and more efficient the renewability of the resource, the greater the likelihood of sustainable use,
- the higher the security of tenure of the resource to the user, the larger the time horizon of local resource management,
- the more actual users have responsibility for management decisions over resources, the more likely the resource is to be managed for long term productivity at less cost to supporting agencies,
- increased equity in distribution of resource benefits, within the limits of social acceptability, encourages greater participation by user groups.

Proposed Steps in Land Use Planning

1. Preparation of base maps from ONCB 1:8000 aerial photos.
2. Land capability classification maps prepared mainly on the basis of slope steepness and soil conditions. Capability classes:
   - annual cropping: <35% slope, >30cm soil depth
   - perennial cropping: <60% slope, >15cm soil depth
   - unsuitable for permanent cropping: >60% slope or shallow soils
   - remnant natural forest
   - susceptible areas: landslides, gullies, stream banks, etc.
3. Provision of arable land (for permanent agriculture) and off farm resources (pasture, forest areas).
4. Identification of future access roads.

Results of the assessment and proposals for land allocation would be documented by the survey teams on baseline maps.

Villager involvement was proposed through observation from elevated points in the community, the construction and use of 3-dimensional cardboard models (by DLD or contractor) or clay models (by villagers) and meetings between the survey team and villagers.

Mohns contended that for such an intensive programme to be effective that a special team of Land Use Planning Assistants (LUPAs) would be required for the test run phase. The LUPAs would be trained in land assessment, surveying and mapping and from a permanent base in NL area continuously motivate farmers to participate in the test run activities.

Refinement of the concept and introduction of test run activities

By the time that activities in the test run villages commenced in 1990, the concept had been refined in a number of respects (15). The primary objective was defined to alleviate potential land use conflicts, especially between villagers and government agencies. This was to be achieved by the establishment of a land use plan by the villagers themselves in co-operation with government officials. A number of principles were elaborated.

CLM Principles

- The decision makers for appropriate land use should be the farmers themselves.
- Conservation of natural resources can only be successful if the inhabitants have sufficient land.
- Farmers need a clear idea of feasible options for land use planning to become a relevant activity.
Implementation involved government officers from 3 different department (Land Development, Royal Forest and extension workers either from Agricultural Extension or Public Welfare) together with project staff. This group, the Land Use Planning Team (LUPT) set out to interact with villagers using a 5 step approach. It was emphasised that the steps should be followed slowly, concentrating on describing present land use before rushing in consideration of problems and potential solutions. The outlook was raised of conservation villages emerging and possibly eventually being consolidating in administrative units such as conservation districts and provinces.

<table>
<thead>
<tr>
<th>Steps in CLM Implementation</th>
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<tbody>
<tr>
<td>1. Monitor present land use: enter land use onto topographic model and later onto baseline map.</td>
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<tr>
<td>2. Identify problems and conflicts: villager discussions resulting in indicating which land is suitable/unsuitable for different uses.</td>
</tr>
<tr>
<td>3. Planning of land use changes and local watershed management measures: based on the optimisation of land use facilitated by government officials.</td>
</tr>
<tr>
<td>5. Identification of a &quot;outer-user-boundary&quot;: delineation of an area most suitable and needed for the villager's permanent use.</td>
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TG-HDP appointed a Land Use Planning Co-ordinator (LUPC) to guide the process, co-ordinate the activities of the LUPT and a Land Use Planning Field Co-ordinator (LUFC) to maintain regular contact with the test run villages. Members of the LUPT were given training in participatory skills, the construction of a topographic model and landscape mapping.

A review of CLM process was subsequently carried out in late 1992 (16) by which time the number of test run villages had been expanded to seven. This mainly involved the Agricultural Adviser attending village meetings and holding a subsequent review session with LUPT members and TG-HDP field staff. The findings of the review included the following points:

- CLM meetings were being held regularly in the NL area test run villages as part of the regular monthly village meeting
- LUPC and LUFC were responsible for preparing, co-ordinating and conducting meetings
- LUPT members generally only attended meetings if they had mandated activities to carry out. RFD officials generally didn't participate
- meetings were rather formal with LUPT members tending to dominate proceedings and concentrate on discussing the implementation of standard activities and campaigning for new watershed protection measures
- the active participation of women was limited (although more open in Lahu villages)
- although there was limited use of the topographic model in meetings, the villagers found it to be a very useful tool; however, the models did not show the proportion of different land uses in each village
- the concept of the outer use boundary had been introduced into the process too soon. Villagers feared that some of them would lose the right to cultivate land outside the proposed boundary before a comprehensive land use plan have been agreed. Co operation between villagers and the LUPT had been negatively influenced by this issue
- watershed management measures had been successfully implemented (including the planting of over 2,900 forest trees and 2,600 fruit trees). It had already been agreed to implement all agricultural/forestry activities in the test run villages (including standard RIA activities) as part of the CLM process

Villagers themselves were found to:

- expect to obtain land use rights through CLM
- question the value of the LUPT in the absence of an RFD official
- oppose the concept of the outer user boundary as it would be used by the LUPT or RFD to limit their land use
- view that activities were not addressing their main problems and needs.

Overall, the understanding of the CLM process among LUPT members and farmers was not clear enough and the knowledge and skills of LUPT members on how to use a participatory work approach was found to be limited. The CLM process had also been converted into activities in the annual workplan, with the tendency to push to achieve targets without due consideration of farmer readiness.

As a result, the main recommendations were to provide further training for LUPT members and farmers on the CLM concept and more training for the LUPT on using participatory working methods. The concept of the outer user boundary was postponed and it was also concluded that more attention was required in gaining more commitment from senior RIA officials at district, provincial and regional levels in supporting their field staff to participate in the CLM process.

Consolidation Phase: 1993-94

Following the review of late 1992, the TG-HDP continued to strive to strengthen the functioning of the LUPT, particularly in the NL
area. At the same time, greater community participation was sought in concentrating agricultural areas closer to the village settlement and promoting social forestry activities in the form of forest and fruit tree planting.

However, several framework conditions and institutional constraints hampered the achievement of some of the original expectations. Despite regular meetings of field staff from different agencies and attendance at TG-HDP planning workshops, the centralised structure of the Thai government system was not conducive to inter-agency co-ordination and consolidation in the form of the LUPT. In addition, although the CLM process continued to emphasise the eventual application and issuance of land use rights, no actual progress in this matter was being made. The low level of participation by the RFD effectively meant that key issues such as land use rights were unlikely to be addressed. Although the TSFMP had been prepared, its acceptance and incorporation into actual implementation by RFD did not occur. The regulatory approach when dealing with villagers was generally maintained.

The legal framework, with watershed classification often found to be inappropriate, coupled with the insecurity of villages located in the Pai wildlife sanctuary, were not conducive to LUPT-community interaction.

However, as the participation of LUPT members in regular village meetings declined, the LUPC and LUFC continued to work with village committees on the basis of the CLM working steps, with RIA support for specific activities being incorporated as requested. The result was that the villagers felt less pressurised and had more time to consider appropriate long term changes in land use and develop community rules and regulations accordingly.

During this period village nurseries for the production of trees seedlings were established, important watershed zones protected (including a 200 rai area which was planted with multi-purpose tree species by the villagers themselves), an irrigation scheme for 200 rai was designed and constructed and grazing areas were improved through fencing and over-sowing with pasture plants. Inter-village boundaries were clearly identified and despite the lack of official recognition, the communities began to feel responsibility for the management of resources within these boundaries.

In HPL area, although the CLM process was largely building upon and consolidated traditional conservation practices (see case studies in volume 2), it was instrumental in establishing improved grazing management and watershed protection in the test run village.

The project also introduced Global Positioning System (GPS) equipment and started to accurately measure and plot individual fields onto a base map in the continued expectation of eventually being used to support applications for land use rights.

CLM guidelines in brief (IP 189) provided an update of the CLM steps in detail in early 1995. However, in hindsight the role of the LUPT and possibility of gaining land use rights were probably over optimistic.

### Overview of the Five Working Steps of the CLM Process

1. **Preparation phase:**
   - identify interested and mandated RIA officials and set up a LUPT
   - identify villages to start with CLM
   - apply Rural Systems Analysis (RSA) to understand the village structure.

2. **Introduction of CLM in the village:**
   - identify interest groups
   - make topographical model
   - discuss land use issues.

3. **The CLM process and activities of the LUPT:**
   - land use discussions
   - land use categories
   - land use regulations
   - transact walk
   - land quality assessment
   - identify activities to improve NRM

4. **Data processing, mapping and regulations:**
   - land use mapping
   - set up village regulations
   - inter-village meetings.

5. **Presentation of results for policy decision making:**
   - regular meetings at provincial level
   - submit land use plans at higher policy level
Expansion Phase: 1994-97

The re-organisation of the TG-HDP for its final phase saw the disbanding of the former Agriculture and Forestry, and Social Programme sections and the establishment of the Mae Hong Son Task Force (MTF) and Areas Teams. The number of technical support staff was correspondingly reduced and the field staff, the Community Development Co-ordinators (CDCs) became directly involved in all project components and programmes implemented at field level, including CLM. During this final phase, 26 target villages (NL - 14, HPL - 12) were selected for the further development and consolidation of TG-HDP concepts and strategies. Each CDC was directly responsible for 2 - 3 villages. It was decided early in the phase that the CLM experiences derived from the test run villages should be expanded to cover all of these target villages. For the first few months, the CDCs spent most of their time using the Rural Systems Analysis (RSA) process to develop mutual understanding of the community setting and situation with the concerned villagers.

Although at this time the RIA field workers participating with TG-HDP in the annual planning and implementation of activities continued to meet regularly, the LUPT was no longer functioning as a unit and jointly attending village meetings to discuss land use planning issues as originally intended.

The continuation of the CLM process in the former test run villages and expansion to new villages in effect became a TG-HDP programme with RIAs supporting specific activities, as proposed in village development plans, according to their mandates. Expansion of CLM into new villages was quite rapid and the project was in a position to facilitate this process by organising study tours for their leaders to visit the test run villages and other examples such as the former Sam Meun HDP area. As there was little RIA involvement in these new villages, the CDCs were able to facilitate the CLM process by concentrating on issues of direct concern to the villagers. In some cases, it took considerable time and agreement for implementation over several years for farmers to cease cultivation in areas which the community had declared as community forest or watershed protection area. However, with little feeling of “top down” pressure to make such adjustments, it has been a sense of community responsibility to effectively manage and conserve local resources for its own sustainable present and future use that has effected such land use changes.

It now appears that villagers no longer have a strong expectation of gaining land use rights. In fact, this issue has been promoted as an expected outcome since the first plans were made in 1984, as a key incentive of the SWC programme and again in the CLM test run villages. However, during this period most villages have gained official status and services such as schools, piped water supplies, improved roads and even electricity have been supplied. In consequence, villagers now feel much more secure about their present locations being permanent settlements, even in the absence of formal land use rights. However, certainly one motivating aspect of the CLM process, and in particular the topographic model, has been the ability to explain clearly to government officials how each community manages the area within the village boundary.

With the probable advent of a Community Forest Act which will give community groups the opportunity to request RFD approval to formally manage local forest areas, it became evident that one of the original proposals, that of transferring information from the topographic model onto base maps should be revived. The CDCs and community representatives were duly trained and annual land use maps which show the location of individual households plots cultivated each year were prepared. These now form a sequence which visually monitor land use changes taking place in the community and can be shown to government officials as needed.

Compared with NL area villages, comparatively few adjustments to land use practices have been implemented in Huai Poo Ling where the Karen people have already been resident for several generations. The main concern for HPL villagers is the lack of comprehension of their traditional long rotational fallow system, particularly on the part of RFD officials who may think that they are clearing undisturbed forest for their upland rice fields. This aspect is likely to be remedied in late 1997 as provincial RFD staff are keen to collaborate with the villagers in preparing for a proposed visit by Her Majesty the Queen in early 1998.

Inter-village Collaboration, Networking and the Involvement of Tambon Organisations: 1996-97

The most remarkable developments, which involve the grouping of villages, have taken place during the last two years. Inter-village networking started mainly at the instigation of the concerned villages themselves to address particular issues. In one case this was to establish rules for straying animals damaging crops in neighbouring villages, in another case it concerned the collection of bamboo shoots by 3 adjacent villages and in the case of HPL, to co-ordinate the establishment of community forests and conservation areas in neighbouring villages. Such cases are described in the case studies presented in volume 2 of this document.

The bamboo shoot issue in NL has now evolved and resulted in 20 villages coming together, the establishment of a formal network and a network workplan to address the issue of natural resource management in 2 medium sized watersheds which together affect several villages.

On another level, the project has stimulated the Tambon (sub-district) councils, which have now all been upgraded to Tambon Administrative Organisations (TAOS) with associated enhanced responsibilities and budgets to manage sub-district affairs, to take a role in overseeing resource management for the whole tambon. This issue is being pursued seriously and sub-district rules and regulations are being enacted.

Most encouragingly, provincial RFD officials have several times over the last 2 years requested the project to plan and provide training for their staff in working with villagers on community resource management and are introducing the CLM process into other districts in Mae Hong Son province.

Review and elaboration of CLM, 1997

A brief review of the CLM programme was undertaken in June 1997 (17). In view of the recent changes and the experiences that had been generated during the final phase of the project, it was felt appropriate to redefine the CLM concept, process, objectives
and aims as presented in the following section.

CLM Concept:

The CLM concept is based on a participatory development approach which involves both the local inhabitants and development agencies. The guiding principles of the concept are that the conservation of natural resources in the highlands can only be achieved if

- the inhabitants of these areas have a sense of permanency and belonging and are able to contribute their ideas to an overall development process which integrates agricultural practices with social activities and emphasises people’s participation and self-reliance
- their right to use natural resources in their community in a sustainable manner is accepted
- they have sufficient land from which to make a living and continue to improve their socio-economic situation in relation to the overall development of the country
- the issuance of legally accepted land use rights is a long term national objective
- resource management planning is based on the characteristics and potentials of the land water and forests
- destructive resource management practices are progressive phased out and replaced by efficient and sustainable methods.

If these principles are followed, it is believed, and has been shown, that highland villagers will cease to encroach into forest areas and take measures to conserve community resources.

A number of considerations relate directly to these guiding principles. These include:

- the community has an important role to play in resource (land, water, forest) management as it is located closest to these resources
- when a community accepts the responsibility to manage local resources, it needs to clearly understand the purpose of each designated area and its proper conservation and utilisation for the benefit of community members
- development agencies should support local communities in terms of exchange of knowledge and ideas to solve problems and identify appropriate alternatives and solutions. They should also improve the understanding of community leaders in relation to pertinent laws and assist the community to develop appropriate rules and regulations
- networking and increased cooperation between neighbouring villages and tambons has the potential to improve the achievement of successful resource management.

The CLM Process as a whole attempts to contribute to an appropriate elaboration of the legal and institutional aspects of highland development related to natural resource management. It tries to strengthen the capacities of communities to manage their affairs and establish trustful relationships between villagers and government officials based on participatory working principles with regard to land use planning and resource management.

CLM Aims and Objectives

The overall objectives of the CLM process are stated as expected outcomes of the process in relation to natural resource management. They are now defined as:

1. Improved sustainable use of land, water and forests for the benefit of the community, the local area, the region and the nation as a whole.
2. Minimal unsustainable use of natural resources.
3. Rehabilitated watershed catchment areas.
4. Intensified agricultural production on suitable land.

The specific objectives or outputs of the CLM process relate directly to the means by which the overall objectives are attained. These are identified as:

- Increased mutual understanding of all stakeholders with regard to the present land use system, its constraints and potentials.
- Increased awareness of on-going degradation processes and the need to improve the management and conservation of the limited resources.
- Increased discussion of land use problems and possible solutions.
- Increased support to communities and their members to improve their skills in land use planning and the monitoring of changes made to resource management practices
- Reduced conflict over land use and increased ability to solve disputes.
- Clearer understanding between communities and government officers on land use within designated areas (especially forest reserves and wildlife sanctuaries).
- Improved cooperation between government agencies.
- Improved capacities on the part of local organisations to sustainably manage their natural resources.
- Consolidated indigenous knowledge of resource management amongst community members.
- Improved legal situation for highland people with regard to land security, land tenure or land ownership.

The CLM process is now considered to broadly follow 6 working steps as shown in Table 3. The working steps describe the introduction of the CLM process into a new area. It should be emphasised that there is no distinct separation between the steps and that people’s organisations in different communities and tambons mobilise, adapt and involve themselves in resource management from various starting points. In fact, it has been found during the last year or so that communities not previously involved have learned from the experiences of their neighbours who have been involved with TG-HDP for several years (see Bor
Krai case study in volume 2.). This is especially the case with the expanded Hilltribe Peoples Network in Pang Ma Pha district (see case study in volume 2.) where some communities have become involved in the network first and only subsequently embarked on the process of village level land use identification and planning. The same is also true for some villages in Tambon Tham Lod (see case study in volume 2.).

**Figure 3 CLM Methodology**

**CLM Working Steps**

1. **Concept preparation and establishment of coordination with concerned agencies:**
   - conduct preparatory meetings with the concerned responsible implementing agencies (RIAs) to clarify the CLM concept and approach with regard to methodology, skills, knowledge and application of a participatory working approach. Study tours to sites with effective community based resource management are particularly effective. Specific training, for example on the construction of a 3 dimensional topographic model may also be given
   - select target areas, introduce the CLM concept and approach and reach an understanding with each community on how to proceed.

2. **Monitor and assess present land use and community management of their natural resources.**
   - carry out a study of the community using methodologies and tools such as Rural Systems Analysis (RSA), Participatory Rural Analysis (PRA), community land resource mapping and use of a 3-dimensional topographic model
   - identify community groups and leaders who are particularly involved in NRM
   - analyse the potentials, limitations, problems and conflicts concerning NRM in the community
   - participate in regular monthly village meetings to facilitate and monitor the process of consideration of NRM issues
   - raise awareness amongst community leaders through study tours to other villages already practicing effective NRM.

3. **Plan land use and natural resource management with the responsible community organisation:**
   - analyse and classify present land uses and identify the boundaries for each land use category (focus group discussions, 3-D model)
   - gather indigenous NRM knowledge in terms of beliefs, rules and regulations
   - establish land use plans (short and longer term) for agriculture, livestock and watershed catchment protection according to the basic needs and critical impacts on the community
   - identify and prioritize development activities to support the land use plans
   - strengthen the capacity of the responsible village organisations as the key mechanism by which NRM will be effected.

4. **Implementation of development activities to improve natural resource management and the establishment of linkages with**
neighbouring communities:

- coordinate with responsible implementing agencies (RIAs) to obtain support for the implementation of activities to improve NRM
- implement activities according to agreed plans
- monitor changes to land use and provide training in individual plot land use mapping
- establish forums for regular meetings with neighbouring villages, paying particular attention to:
  - land boundary confirmation
  - conflict resolution
  - joint monitoring of resource utilisation
- Modify/update rule and regulation for NFW including forest fire control

5. Strengthening of responsible community organisations and inter-village networks:

- joint planning of NRM between villages
- establishment of a formal network administrative and management structure
- coordination by the network with local administrative bodies, in particular the Tambon Administrative Organisation (TAO), which has legal responsibilities to safeguard natural resources in the sub-district
- coordinate with responsible agencies at district and provincial levels
- facilitate the holding of inter-village network forums to exchange experiences.

6. Dissemination of experiences to other areas and contribute towards the development of appropriate policies:

- spread the CLM experiences to community organisations and agencies in other districts, provinces and regions (by hosting study tours, conducting workshops, providing training)
- identify means by which these experiences can be included in the process of policy development (in workshops, attending meetings, demonstrating with maps and GIS).

The June 1997 review also made a comparative analysis of the situation in the NL and HPL areas and proposed a number of recommendations to TG-HDP for the final year of the project. These included:

- continue to support and strengthen the capabilities of the network and TAO S in NL area,
- facilitate the upgrading of the village networks in HPL into a tambon level network in co-ordination with the HPL TAO,
- involve district and provincial agencies so that they can observe what the villagers have achieved and consider formal recognition
- link information systems and the summarisation of experiences to policy levels so that effectively functioning networks and TAO S can serve as models for future natural resource management by community organisations.

The issues of network and TAO strengthening have since been given overall priority in the 1997-98 MTF workplan, whilst the project in collaboration with Chiang Mai university and RFD, is supporting a Masters degree student to enter village, network and tambon land use information into a Geographical Information System (GIS). An international workshop on community based natural resource management experiences in upland and highland areas will take place in June 1998.

CHAPTER V

IMPACT AND RECOMMENDATIONS

Introduction The final 2 chapters of this review, impact and recommendations and lessons learned, draw on the TG-HDP’s actual experiences in implementing agricultural and resource management programmes in 2 district, 4 sub-districts and more than 30 villages, including 6 inter-village networks. The 9 case studies presented in Volume II. attempt to describe and discuss a range of such experiences and therefore should be read in conjunction with these chapters.

The Community Based land Use Planning and Local Watershed management (CLM) programme is considered to have improved leadership abilities and confidence, participation and cohesion, forest product management, watershed protection, livestock raising and agricultural production practices at community level; understanding, cooperation, conflict resolution and resource management at inter village network and sub-district level; and acceptance of indigenous knowledge and a community based approach at provincial government level. Recommendations are made to further support local administrative organisations, establish an inter disciplinary team approach at district level and conduct participatory action research linked to policy and legal framework development.

Impact

1. Improved management capability and confidence among community leaders which has enabled them to relay information and explanations about natural resource management systems in their communities to outsiders, particularly concerned RIAs, in systematic and clear terms.

2. The CLM working approach has contributed to improve cohesion within the community so that they are able to plan and implement their activities to improve community resources. Examples include joint analysis of the natural resource situation,
campaigns for forest and watershed conservation by planting-trees on auspicious days and establishing rules and regulations and strictly enforcing them.

3. Better understanding and co-operation between neighbouring villages which share the same resources has been promoted, such as following the rules and regulations of each village, and agreeing on village boundaries.

4. Rules and regulations have been established, accepted and well understood. All villagers now follow them. This indicates that awareness of natural resource conservation within the community organisation has increased.

5. Farm practices have become more diversified as appropriate for local conditions (size, soil condition, geography etc.). It allows the farmer to generate a wider range of produce and has created more channels for income generation.

6. Awareness of the important of community organisation has been stimulated which in turn has increased the sense of ownership and responsibility to protect and preserve natural resources in a sustainable way. This was achieved through village forums that analysed the natural resource situation of the community by identifying the resource boundaries of each village and the boundaries of cultivation areas. The community organisation was able to gain a clearer picture of existing resources and of how many resources have been used and how much is left in the community at present. Therefore, an awareness of the need to conserve resources and use them efficiently in sustainable manners (especially forest areas) has been created.

7. During the early stage of the CLM working process, land use conflict both within and between villages (in NL and HPL) was found. The process provided an opportunity for villagers to analyse the situation, exchange ideas and develop a conflict resolution process which enabled them to solve their conflicts in a structured way. The outcome has been joint management or cooperation for resource conservation.

8. Forest area increased (in some villages) by replanting and natural regeneration as summarised below:

<table>
<thead>
<tr>
<th>Area</th>
<th>Conservation Forest or Watershed Forest/ Protect Forest (rai)</th>
<th>Replanted Forest(rail)</th>
<th>Fruit Tree Area(rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL</td>
<td>29,340</td>
<td>420</td>
<td>1,196.5</td>
</tr>
<tr>
<td>HPL</td>
<td>32,700</td>
<td>400</td>
<td>632</td>
</tr>
<tr>
<td>Total</td>
<td>62,040</td>
<td>820</td>
<td>1,828.</td>
</tr>
</tbody>
</table>

9. Villagers have gained increased knowledge and skills for sustainable use of natural resources, such as appropriate methods of harvesting non-wood forest products and controlling the exploitation of forest products such as bamboo shoots, etc. In addition, they have also developed methods to protect watershed forests such making fire breaks around them.

10. Villagers have developed proper land use plans for agricultural production where cultivation focuses more clearly on land that is suitable for intensive cropping and permanent land use.

11. There are consequently, more designated permanent livestock raising areas. This contributes to better land management and reduces conflicts caused by animals destroying farm crops.

12. Villagers have gained an increased sense of security and more confidence in decision making as indicated by their investment in longer term enterprises such as fruit trees, paddy area, irrigation systems, etc.

13. More inter-village networks to address NRM issues have been established. Most of the networks developed from a common interest such as the Pang Ma Pha Hilltribe Network, which developed out of conflicts over the use of forest products. The Huai Poo Ling Watershed Network developed from a common need to protect the watershed forest of Huai Poo Ling which is a major source for several streams in the HPL area.

14. The capacity of community leaders and members has been improved. This has enabled them to communicate effectively with GOs, NGOs and other outsiders. Community organisations have also developed other channels of communication with other development agencies.

15. It has been recognized that NRM is a major issue. Therefore TAO and TCs have established NRM sub-committees at the tambon level with responsibility for coordinating and supporting the formation of village and tambon level people's organisations and coordinating with other concerned bodies.

16. The provincial Forestry Office has accepted that CLM/NRM is one of the most appropriate methods for community-based participation. They are now applying it in other districts of Mae Hong Son Province.

17. CLM implementation has been accepted at the provincial policy level. As a result, relocation programmes have been stopped. Government officers now agree that "Humans can live in harmony with the forest", accept the value of indigenous knowledge
and the capability of community organisations with regard to NRM issues.

**Recommendations**

1 **Support and improve the capacity of local administrative organisations to participate in NRM**

The concept of CLM is based on the "**Bottom-up Approach**" which focuses on strengthening the capability of community organisations in such areas as situation and problem analysis. In relation to natural resources, this could increase awareness of the need for natural resource conservation.

However, in order to create a mechanism for coordination, linkage and support from the policy level for implementation, it is necessary to consider the role of local administrative organisations such as TAO. TAO has support from the national level and is in line with national decentralisation policy. Thus, in order to allow the TAO to have the right to conserve and to manage sub-district resources effectively, it is suggested to strengthen the capacities of TAO in the following areas:

1.1 **Support the role of community leaders in TAO forums**

Understanding, knowledge, awareness and the responsibility for managing sub-district resources and eco-systems can be fostered through providing the opportunity for village groups and some senior persons to join in the TAO meetings. This would allow villagers to share ideas and experiences on NRM at village level which could improve coordination at the inter-village level and could be developed into a network for NRM at the tambon level. Such a structure would improve other organisations in the future.

1.2 **Designate forestry officers at the tambon level**

Government agencies, especially RFD, should designate staff to work closely with TAO in order to obtain better information and to understand the real situation in the field. The role of RFD staff would be to support or backstop TAO on technical issues, to help promote the concept of "Humans Love the Forest", and reduce conflicts over land use.

1.3 **Improve TAO planning and budgeting systems for NRM**

TAO should have a budget and clear implementation plans for NRM in each village. It should also fully support community organisations in NRM at village and network levels.

1.4 **Assist the provincial authority to conduct pilot projects on NRA4**

The provincial authority should conduct pilot projects on, "**TAO Based Land Use Planning and Natural Resource Management**" and "**Natural Resource Management Network**" in order to develop clear, realistic guidelines and models for NRM in line with government policy.

2. **Establishment of Supportive Mechanisms at the District Level**

Many districts, especially in highland areas, have experienced land conflicts and conflicts over the use of natural resources within village, between villages and between villages and government agencies. In these cases, it is suggested that a formal "inter-disciplinary team" be established at district level (according to RTG regulation) to use the CLM approach to effectively solve such problems. This would also strengthen the capability of POs and TAO in a practical way.

3. **Conduct Research to Improve Policy at the National Level**

Central government should establish a research team to conduct "**Participatory Action Research**" on CB-NRM at the micro level (with various organisations) in order to obtain sufficient information with regard to potential and capability of community organisations to enable further development of policy and forestry law to take place.

**CHAPTER VI**

**LESSON LEARNED**

**Introduction**

The extent to which agricultural and natural resource management systems have developed in the communities where TG-HDP has been operating is probably best described in the case studies included in Volume 2. of this document. The changes that have occurred have been due to many factors. Some of these relate directly to the project, others to the services and improved
facilities provided by government programmes. In addition, increased opportunities generated by an expanding private sector and changes initiated by the villagers themselves have also played their part. This last category has proved the most encouraging and shows that villagers are now better equipped to adapt to their role and take their place in a more modern and integrated Thai society than in the past.

In preparing this review of TG-HDP's agricultural and resource management programmes, these have been a deliberate attempt to describe the earliest programmes and how they evolved into the Sustainable farming Systems and Community Based Land Use Planning and Local Watershed Management approaches. This chapter attempts to draw out what lessons have been learned along the way in such areas as government concerns, policies and laws; project role and strategies; collaboration with various government agencies; approaches and tools; village level community involvement; the establishment of inter-village networks; Tambon level responsibilities, and specific aspects directly related to technological change. Many of these lessons have already been incorporated into the CLM concept, process, objectives and working steps as described in Chapter 4.

Government concerns, policies and laws

- Government policies in the rural/highland sector adapt rather slowly to changing conditions, except when there is an emergency/disaster such as the floods in the south of the country in 1989.
- The community development process is constrained when the laws governing the policies of different ministries and departments conflict.
- When a new system such as watershed classification is introduced it can only be applied if it is accurate, feasible and accepted by the concerned authorities.
- The decentralisation policy to Tambon level has been instrumental in an increased desire to improve local capabilities.
- Despite its legal basis, there has been no political will to address the sensitive issue of land use rights in highland areas.
- A combination of consistent law enforcement and the development of basic services and alternative income generating opportunities has been effective in reducing opium poppy cultivation.
- Despite formal policy not having been supportive, it has been possible to develop approaches and experiences such as CLM.

Project role and strategies

- The goals, objectives, approaches and strategies of a long running project need to be periodically adjusted according to changing conditions and circumstances.
- Human resource development (HRD) is the key to sustainable improvements in highland areas.
- Projects have an important role to play in developing and adapting alternative approaches and strategies.
- It is difficult for a single project to influence national policy. However, the networking of experiences of many development agencies can assist in the process of policy adjustment.
- Project staff have been able to adapt their working role from initiator to facilitator as the capabilities of community, network and Tambon leaders have improved.

Collaboration with government agencies

- The strengthening of basic services is best carried out together with and by the responsible government agencies.
- The development of improved strategies is often constrained by the standard programmes and procedures of responsible government agencies.
- Government agency "ownership" of project component is difficult to achieve.
- The payment of cash incentives during the SWC programme were effective in gaining commitment from RIAs field staff.
- However, this commitment declined with the phase-out of incentives.
- Informal working groups or teams, such as the Land Use planning team, are difficult to sustain when formal policy is not supportive.
- Inter-agency groups, such as LUPT, have difficulty in reaching a common understanding. However, regular meetings of RIA field staff improves coordination.
- New approaches, such as CLM, which differ from those used by their department are not easy for RIA field staff to implement.
- The involvement of Royal Forest Department staff in community forums and discussions increases the importance of such events and ultimately the confidence of community leaders to deal with related issues.
- The involvement and understanding of RIA staff was considerably improved once CB-NRM was being successfully carried out in several communities.

Approaches and tools

- When they are newly introduced, community based approaches need a comparatively long time to achieve tangible outcomes as initiate understanding of the concept and procedures by community leaders and field staff is rather slow.
- At the initiation stage, full time field staff with 1-3-4 villages are needed for 2-3 years to introduce and facilitate approaches such as CLM.
- The CLM process has proved to be effective in leading to improved natural resource management at village, inter-village and Tambon levels.
- The application of analytical methodologies and tools such as Rural Systems Analysis and Participatory Rural Appraisal enable the villagers and field staff to gain in-depth understanding of the community situation. Such understanding is necessary before proceeding with activity planning and implementation.
- Of the many working tools such as maps, aerial photographs and GPS, that have been used during CLM, the 3-dimensional model has been found to be most useful.
- Community land use mapping is difficult to introduce but is effective in enabling community leaders to accurately convey land use change information to outsiders, especially government officials.
Community involvement

- The most important aspect of CB-NRM is the development and strengthening of community organisation in terms of their capacities and leadership.
- CB-NRM is easier to introduce and has greater chance of being effective in villages with subsistence based farming systems that do not emphasise cash crop production.
- CB-NRM can only be successful if villagers have enough land to meet their consumption and occupational requirements.
- Improvement in the management of natural resources has to be carried out in conjunction with the development of the community agricultural production system and associated practices.
- The conferring of official village status, even in the absence of land use rights, has given communities a sense of permanency which has resulted in increased consciousness of the need to protect and improve the management of their natural resources.
- The community forum on NRM enables villagers to consider various aspects of resource management and raises consciousness of the need to conserve and rehabilitate certain important areas such as watershed catchments.
- The inclusion and consideration of cultural traditions and beliefs as part of the NRM process has increased community acceptance and participation in resource conservation.
- Meetings and forums are best held on traditional rest or religious days when the villagers do not work in their field.
- Female members of the community have an important role to play in NRM, especially as they are the main gatherers of forest products.
- Study tours and exchanges of experiences, especially within the same ethnic group, greatly improve the vision and understanding of NRM.
- Participatory processes such as CLM, lead to an increase in confidence amongst community members to manage their own affairs, despite legal constraints that may exist.
- Communities require the support of development agencies in gaining an understanding of the laws and policies of the government and in such techniques as land use mapping.
- Forums as briefings conducted by community leaders for visiting government officials and others are important in providing them with the opportunity to present their NRM systems, increase their confidence and gain the support of concerned agencies.

Inter-village networks

- The increased capabilities and confidence of community leaders can lead to unexpected outcomes. In the Nam Lang area, the formation of the Pang Ma Pha Hill Tribe Network Organisation was the initiative of the community leaders themselves.
- The establishment of the Pang Ma Pha network derived from consideration and action to improve a real problem affecting several villages. The effectiveness of such cooperation was recognised by neighbouring villages who requested to join the network.
- As a network expands its membership and the scope of the issues it is dealing with, it needs to establish a formal administrative and management structure.
- Conflicts over inter-village boundaries can eventually be settled by involving the concerned villagers in site inspections and a series of discussion forums with a network member acting as mediator.

Tambon level responsibilities

- The policy of decentralisation of authority to local organisations at Tambon level has encouraged increased awareness and responsibility for natural resource management.
- Tambon Administrative Organisation members have gained confidence in applying a jointly planned working process.
- The authority of the TAO is limited in officially designated areas such as wildlife sanctuaries or national parks.
- Senior officials can undermine the authority of the TAO by their involvement in illegal activities such as trading in timber. TAO S can be effective in supporting village level natural resource management.

Technological changes

- The highland areas have required the development of specific technologies to meet the different situations of agricultural production and resource management when compared with the lowlands.
- A short-term impact can be achieved by implementing an intensive package approach such as the SWC programme. However, continued adoption depends on the farmers view of the value of SWC measures on their land.
- Sustainable changes and improvements to agricultural and natural resource management practices are best achieved through the involvement of innovative farmers from an early planning stage.
- The introduction of permanent cultivation with irrigation has both reduced the intensity of cultivation in upland areas and led to the production of wider range of crops.
- Fruit tree production has been shown to have high income potential. However, due to annual price fluctuations, farmers should plant a range of fruit tree species and varieties.
- Natural regeneration of rotational fallow fields leads to a high bio-diversity of species, as long as the villagers protect such areas from fires and the felling of trees.
- Tree species introduced by the Royal Forest Department and planted in mono culture gain no acceptance by villagers who expect and prefer to eventually harvest wide range of products (bark, roots, shoots, etc.) from community forest areas.
- A degree of management and improvement of extensive grazing has to be introduced in order to protect forest products (NWFPs) can become major sources of income if sustainable management practices are introduced.
- Villagers are interested in reviving traditional knowledge of NWFP use which contributes to consciousness of the importance of resource management.

END NOTE
1 Deutsche Gesellschaft für Technische Zusammenarbeit GmbH

2 Adapted from GTZ Regional Rural Development, RRD at a glance, Eschborn 1991

3 United Nations Fund for Drug Abuse Control

4. IP 48

5. IP 49

6. IP 80

7. IP 94, IP 135, IP 142, IP 165

8 Pang Tong village - interviews tied out in November 1997

9 IP 136 Social Forestry Options for the TG-HDP, B. Mohns and H-G Janze, February 1991

10 The Social Forestry Development Concept of TG-HDP - presented at the GTZ Asia-Pacific Regional Working Group on Farming Systems Development, April 1994

11 The Ministry of Labour and Social Welfare was created in 1994. Formerly its Departments were within the Ministry of Interior.

12 Sam Meun HDP compared Watershed Classification with detailed information in a GIS.

13 NORTHNET is a northern NGO organization

14 IP 113. The introduction of land use planning and local watershed management in the TG-HDP project areas Nam Lang and Huai Poo Ling. B. Mohns, November 1989

15 Community based land use planning and local watershed management for the highlands of northern Thailand: the TG-HDP approach by Visit Piyarom and Christoph Backhaus, presented to the International Workshop on Upper Watershed Management, Yogyakarta, Indonesia, October 1990

16 IP 171: Findings of the review of the community based land use planning and local watershed management process and recommendations, by M. van Eckert in co-operation with TG-HDP staff.

17 IP206: Lessons learned from CLM and SFS in the TG-HDP Nam Lang and Huai Poe Ling areas by Tulawat Panichcharoen and Chatchawan Tongdeelert, 1997.