Working Paper 08

Country Status Report
on Watershed Management
in Cambodia, Lao PDR, Thailand
and Vietnam

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Part I – Summary
The Status of Watershed Management in Cambodia

Part I - Summary

1. Enabling regulations

The Cambodian Government (RGC) has signed several International Environmental Conventions related to watershed management, including the Convention on Biological Diversity, the Convention on Climate Change and the Convention on Wetlands of International Importance (RAMSAR Convention). To meet the requirements of these conventions, the Government of Cambodia has assigned some key ministries (MoE and MAFF) to translate them into national policies.

Regarding national policies and laws relevant to Watershed Management, the Ministry of Agriculture, Forestry and Fishery (MAFF) and Ministry of Water Resources Management and Meteorology (MWRM) have each drafted a Sub-Decree on Watershed Management for Cambodia. In regard to the development of a consistent legal framework for watershed management there is little co-operation between these two ministries or other line ministries such as the Ministry of Land Management, Urban Planning and Construction (MLMUPC), Ministry of Rural Development (MRD), Ministry of Water Resource and Meteorology and with international and non-government agencies.

There are a number of key challenges commonly recognized:

- To improve the roles and responsibilities and the co-operation in regard to development of a legal framework between ministries;
- To reduce contradictions and overlaps in existing laws and regulations;
- To improve enforcement of laws and regulations to make the legal framework effective;
- To proceed with processing and approval of important laws such as the Protected Areas Law and the Law on Fisheries.

2. Institutional framework

Cambodia has undergone dramatic economic, social and political transitions over the last decade. The country came from isolation to regional and global integration and has experienced rapid institutional changes. Therefore, WSM is a very new concept in Cambodia. In the newly emerging institutional landscape, several institutions are competing for significant roles in the management of natural resources and related issues.

The Ministry of Agriculture Forestry and Fishery (MAFF) is responsible for the management of forest resources outside protected areas. The Department of Nature Conservation and Protection (Ministry of Environment) has the mandate to preserve biodiversity, watersheds, and other environmental assets within Protected Areas. The fact that MWRM and MAFF have independently drafted a Sub-Decree on Watershed Management provides evidence that the Cambodian institutional landscape related to watershed management suffers from a lack of clarity regarding roles and responsibilities.
To make institutions more effective in regard to NRM and Watershed Management the following issues need to be addressed:

- Improve governance and reduce corruption and vested interests in all sectors and at all levels of government to allow more effective law enforcement and allocation of resources;
- Decrease the dependence on external assistance and take active leadership in the institutional landscape, which is dominated by donor-assisted projects and programs;
- Generate a better understanding among government officials and the general public in regard to natural resource management and watershed management.

### 3. Consistencies in planning processes

Many different planning bodies and planning approaches in various sectors and on various levels exist or are currently being developed. In regard to spatial planning, the Ministry of Land Management, Urban Planning and Construction (MLMUPC) has the mandate to create a master plan on land demarcation and management in cooperation with other concerned agencies, including MAFF, MoE, MoI, MRD and FA. In the areas under their responsibility, these agencies should develop more detailed development plans and facilitate their implementation.

The following challenges need to be addressed:

- Improve inter-sectoral cooperation between different ministries and their line agencies with regard to development planning and spatial planning;
- Assure that the objectives of WSM are taken into account in the planning processes and plans of sectoral agencies;
- Enhance stakeholder participation and the integration of bottom-up planning in planning processes of public sector agencies at all levels;
- Take into account the actual situation and constraints and opportunities in the country’s main watersheds through systematic collection, analysis and utilization of data, knowledge and experiences.

### 4. Implementation experiences

Cambodia itself does not possess extensive experience in watershed management but implements activities relevant to watershed management including community forestry, community fisheries, participatory land use planning and community based natural resource management. These activities are designed and implemented as cooperative efforts by various government organizations, NGOs and IOs; for example:

- Guidelines for Community Forestry have been prepared by a team of practitioners with governmental or non-governmental work experience and expertise in community forestry development;
- Promising community fishery and community forestry pilot projects have been implemented at various sites in Cambodia;
- Experience in piloting Participatory Land Use Planning has been gained in four provinces. Presently, the process has been completed in 11 communes and is ongoing in 9 communes.
• One of the few established WSM projects deals with drinking water supply for Sihanoukville, a town where relatively wealthy drinking/industrial water consumers benefit directly.

Experiences gained so far have outlined a number of lessons learned and issues to be addressed:

• Documentation of experiences and lessons learned is still very limited,
• There are difficulties in accessing information concerning implementation experiences in some government agencies (as the collection of information for this paper revealed),
• There are justified concerns as to whether the WSM concept is applicable in a sustainable manner in poorer regions of the country where potential beneficiaries are hardly able to pay for the benefits they receive;
• Approaches and methods that have proven successful in donor-assisted projects such as Participatory Land Use Planning (PLUP) should be owned by the Cambodian government and should be included in the local level planning framework (Commune Development Planning).
• All implementation experiences are from donor-assisted projects; the integration of watershed management objectives into mainstream government planning and implementation has not yet taken place.

5. Capacity building

As the concept of Watershed Management is new in Cambodia, research that is relevant for WSM has hardly been conducted. Institutions with a mandate to draft policies and build capacities in WSM cannot rely upon the experiences and human resources available in their own country, but depend on the transfer of external know-how and experience. A logical consequence is that capacity building for WSM related approaches and methodologies takes place primarily in the context of foreign-assisted projects. Under these projects, several training teams have been established to carry out capacity building activities, as follows:

• Cambodia Community Forestry Training Team (CAMCOFTC),
• Watershed Management Training Team,
• Training Team for Participatory Land Use Planning Training (PLUP),
• Capacity Building for Sustainable Development in the Tonle Sap Region,
• Participatory Protected Areas Management Team,
• Community Based Natural Resources Management (CBNRM) Training Team.

These training teams have already organized and carried out various training courses related to NRM and WSM for government and NGO staff at national, provincial and field level.

However, most training teams and training programmes only exist and function with financial support from donors and projects and will probably cease to operate when project support is terminated. The skills and methods acquired in these training courses are not considered as official duties of government field officers and/or there are no official programs where these capabilities are required. Many government officials who have been trained in one or more of the above programs therefore have little chance to apply the skills acquired. Moreover, the training curricula are somewhat outdated and need adjustment. There is,
However, no funding to update the training concepts after termination of the project that has promoted the respective course.

One could argue whether donors and projects are to blame for generating products and services that are not really in demand or whether it is the government's fault for not utilizing opportunities of potential benefit to the country.

The issues to be addressed in terms of capacity building are therefore:

- The – partly donor-driven - agenda of many projects leads to the promotion of capacities that sometimes do not match the mandate and duties of public organizations and their staff;
- There seems to be considerable duplication of training efforts between the various capacity building activities (for instance, those implemented by CBNRM, PLUP and WSM). From a resource allocation point of view and equally on the parts of funding agencies, trainers and trainees, this is inefficient and requires improved coordination between, and streamlining of, training courses.

6. Impact monitoring

Standards and procedures for monitoring watershed related variables have been developed by RGC in co-operation with various MRC-programs. In order to utilize these procedures for impact monitoring, data related to the variables should be collected and analyzed regularly and related to actions and changes occurring in the main watershed areas of the country.

Such a system of impact monitoring is currently in its early stages of development in Cambodia. If impact monitoring takes place at all, it is mainly concerned with individual projects and serves the accountability requirements of external funding agencies and related information is almost unavailable to the public. Where information from impact monitoring exercises is accessible, it can serve to form interesting case studies but is not sufficient to generate a comprehensive picture of cause-effect relationships in watershed management in Cambodia.

There is, therefore, a need to:

- Regularly apply and improve standardized monitoring of watershed related variables and regularly publish, analyze and utilize the information generated;
- Ensure the quality and integrity of data and information collected through impact monitoring and make it more generally available;
- Develop and establish comprehensible principles, criteria and indicators to monitor the performance of government and private sector activities in NRM and WSM;
- Improve transparency and accountability by making information publicly available.
7. Financial mechanisms and incentives

Due to the low priority of WSM and a limited fiscal budget, RGC has no special funds earmarked for WSM. Most of the activities carried out by various agencies depend heavily on external financial support. Understandably, the government finds it difficult to allocate funds to areas where institutional responsibilities are unclear and where almost all funds are provided by external agencies as off-budget support. Thus the availability and allocation of funds is neither clearly known nor predictable.

To date, there have been no mechanisms established for upstream-downstream compensation. Since hydropower generation plays only a minor role and downstream beneficiaries in most watersheds (rice farmers and fisher folk) live at the subsistence level, and often below the poverty line, such mechanisms may be difficult to introduce in Cambodia.

As yet, private investments in WSM related fields are limited although they are playing an increasingly role in the form of “forest concessions” or “economic concessions”. Under the concession systems, RGC provides private companies with long-term leases to utilize these areas, which are mostly demarcated as “degraded land”, productively and to generate employment and income for the rural population. Governance problems, however, often lead to difficulties in enforcement of contractually agreed conditions.

The following issues require attention:

- The Government should assure that priority needs of WSM are identified and that sufficient funds are provided in the budgets of the sectoral agencies and donor-assisted projects,
- To encourage domestic and foreign private sector investment in WSM related activities, a stable legal framework must be established and enforced so that investments may be secured and contracts lawfully implemented,
- The alignment and coordination among various funding sources (internal and external) in NRM and WSM related fields should be improved in an initiative allowing relevant government agencies to take the lead in a coordinated manner.

8. Conclusions

For Watershed Management to be successful in Cambodia it is essential to establish WSM as a priority and, depending on the outcome, to improve cooperation among government institutions, donor agencies and community based organizations in drafting the respective legal framework as well as planning and implementing successful measures.

Cambodia has numerous concepts and plans but lacks inter-agency co-operation and co-ordination as well as consistent enforcement of laws and regulations. As WSM is a new concept in Cambodia, experience of implementation and the level of inclusion in legal and institutional frameworks are limited. Public awareness of watershed-related issues has, however, been increasing and relevant institutions have begun to integrate WSM perspectives into their legislation and planning processes. Due to a lack of co-ordination this has already resulted in a proliferation of strategies and regulations.
WSM relevant research hardly exists and, with the exception of one newly developed curriculum at a single University, capacity building is almost exclusively through specific approaches and methods developed by donor-assisted projects. Results of impact monitoring – if any - are scattered among various projects and are difficult to access. Standardized methods, criteria and indicators have already been developed but need to be applied and their results used to inform ongoing changes and activities. Findings and results also need to be communicated to facilitate comparison between approaches and projects.

Funding for WSM depends heavily on external support and, since rapid recovery of state finances is not expected, this situation may not change. However, as long as WSM is of low priority, allocation of responsibilities remains unclear and different agencies adopt different and sometimes contradictory or competing approaches, the government’s hesitance in allocating scarce financial resources is understandable.

At such an early stage, however, Cambodia may be able to avoid some of the difficulties and problems faced by neighboring countries in establishing WSM if experiences from these countries are thoroughly studied and evaluated.
The Status of Watershed Management in Lao PDR

Part I – Summary

1. Enabling regulations

Laos has acceded to the international conventions on biodiversity, desertification and climate change as well as CITES and Agenda 21 for sustainable development and environmental protection. Although the government has not yet ratified these conventions, the existing commitment has served to foster development of national policy on sustainable natural resource use and management. For example, biodiversity conservation has been declared a priority in the development agenda in Laos and in 1993, the government issued a decree establishing 18 National Biodiversity Conservation Areas. With respect to Watershed Management (WSM), key national level documents include Prime Ministerial decrees 01 and 135, issued in 2000 and 2002 respectively. To increase the consistency of the legal framework within the institutional landscape, both decrees name key actors at the different organizational levels applicable to WSM. As the following sections point out, however, progress with respect to implementation of these regulations and clarification of responsibilities amongst key actors remains slow.

Achievements:

- The Government through the Ministry of Agriculture and Forestry (MAF) are committed to a program of integrated area based development centered on watersheds and river basins.
- Although incomplete, a number of laws strategies and decrees supporting integrated watershed management, especially at the national level, have been enunciated.

Remaining Issues:

- At present there are no watershed management policies or strategies developed and declared at the provincial or district level.
- MAF's vision that resources allocated to upland development should be in accord with integrated watershed management plans has been hindered by the lack of mechanisms and procedures for incorporating the integrated watershed management approach into the national planning framework.
- There are no specific laws, regulations or guidelines defining the involvement and participation of local people in natural resource management.

2. Institutional framework

The principal government agencies dealing with watershed management are the Prime Minister’s Office (PMO) and various line ministries. The agencies under the PMO include the Committee for Planning and Cooperation (CPC), the Science Technology and Environment Agency (STEA) and the Water Resource Coordinating Committee (WRCC). Ministries involved in WSM outside the PMO include the Ministry of Agriculture and Forestry (MAF), the Ministry of Industry
and Handicraft (MIH), the Ministry of Finance (MOF), the Ministry of Public Health, the Ministry of Communication, Transport, Post and Construction (MCTPC), and the Ministry of Education (MOE).

Of these ministries, MAF has the mandate to develop national level guidelines, regulations and plans supporting management of forest, land and water resources. Decree 135 points out that development plans of provincial and lower levels have to be based on the directives and targeted expectations defined by CPC (PM 135, 6.1.). The plans thereby developed shall then serve as a base for the production of the national development plan, guiding sectoral agencies in their planning and implementation (PM 135, 6.3.). Besides these planning authorities, CPC has also gradually acquired an important role in implementation. Decree 01, drafted to guide the country’s administrative decentralization process, defined the province in a strategic role, the district in a budget-planning role and the village in an implementing role. Evidence suggests that cross-sectoral and vertical linkages between central level stakeholders in watershed management are undergoing significant structural and procedural changes to allow for cross-sectoral management planning.

Achievements:

- Relevant actors consider watershed management as sector coordination rather than an integrated sector plan.
- MAF is currently playing an active role in watershed management by promoting provincial and district level WSM planning.

Remaining Issues:

- Cooperation and coordination between institutions responsible for planning, prioritizing and decision making needs strengthening.
- There is a need for MAF and CPC, two key actors in WSM, to clarify roles and responsibility in planning and implementation given current areas of overlap and lack of policy coherence.
- Implementation of integrated watershed management, which is usually by donor organizations, should be integrated into existing government structures.
- Institutions responsible for natural resource management planning at the central level are still confined to sectoral planning approaches.

3. Consistencies in planning processes

Supra-national level planning capacity is centered in the MRC, where efforts are focused on establishing a Mekong River basin development plan using information and development plans of the Mekong countries and especially those of the lower basin. This, however, remains a work in progress, and, as such, guidelines and details of the development plan have yet to be produced. At the national level, MAF, with the support of DANIDA and ADB, has developed guidelines for WSM planning and these have already been tested and applied in a number of provinces and districts in Laos. An area-based approach, using natural boundaries to delineate planning areas, presents both risk and opportunities. On the one hand dynamic relationships between natural resources can be made clearer where planning covers a catchment or watershed unit. On the other hand, implementation and planning activities may encounter severe administrative
difficulties when, as is normally the case, catchments cross district or province boundaries. Furthermore, competition between approaches led by different agencies in a single area can lead to confusion and dejection among local stakeholders.

Achievements:
- Participatory WSM planning guidelines have been developed and applied.
- The PMO is promoting a decentralization process based on Prime Minister’s Decree No.1, which stresses the role of the province in developing long-term strategic development plans, the district in planning and budgeting and the village in implementing plans.

Remaining Issues:
- Many WSM plans, including Nam Tong WSM plan 2001, Nam Neun WSM plan 2002 and Nam Tin WSM plan 2002, have yet to be implemented due to budget deficits.
- The coexistence of differing planning approaches at the national and regional level - regional planning by the CPC and area based or watershed planning promoted by MAF and STEA – creates difficulties for provincial and district level planning offices in deciding the appropriate approach. Common planning guidelines, either for regional or watershed management planning need to be developed for use at the central, provincial and district levels.
- Planning guidelines specifically supporting Prime Minister’s decree No.01 and budgetary allocation to facilitate implementation have yet to be made available.

4. Implementation experiences

At present, there are two well-known watershed management plans ready for implementation: those for Nam Ngum watershed, supported by ADB and those for Nam Theun 2, supported by several investment groups. Following its objective of building natural resource management capacity, the MAF/Danida National Capacity Building Project also implemented two small case studies on district catchment management planning. These were in Fueang District, Vientiane Province and Nam Tin catchment in Bokeo Province. Preparation of the plans was coordinated by MAF and its provincial and district agencies.

Achievements:
- Several MAF-Danida projects concerning information management have had positive impacts in WSM e.g. The Lao PDR Watershed Management CD and WSM plans.

Remaining Issues:
- WSM projects that are or have been implemented are mainly supported by international organizations. As yet, there are no WSM projects directly supported by the government.
- Considerable experience has been accumulated at different levels with implementation of development projects, however, related information has not yet been documented or disseminated.
5. Capacity building

Research in WSM is currently centered in two national institutions, the National Agriculture and Forestry Research Institute (NAFRI), and the National University of Laos (NUOL).

MAF, in collaboration with NUOL, DSE (now called InWent), Germany and DANIDA, has jointly organized a number of training courses in watershed management and planning for government staff at all levels. The most recent course was held in March 2004 with the support of InWent Germany and MRC/GTZ.

The Faculty of Forestry at NUOL has included a course on integrated watershed management as part of its B.Sc. curriculum. The course manual is based on international, regional and national experience in watershed management. Target groups include undergraduate students and vocational students enrolled in the faculty. Watershed management documents and training materials are available in English and, in some cases, Lao.

Achievements:
- A considerable amount of WSM training for central and local level staff has taken place in Laos over the past 20 years.
- A WSM course is currently included in the NUOL curriculum.

Remaining Issues:
- Previous training on WSM has been supported only by international organizations and not directly by the Government.
- Trained staff have yet to apply the concepts taught.

6. Impact monitoring

Overall, monitoring systems have yet to be applied in all WSM projects implemented in Laos as most are still at the stage of developing operational plans. Current watershed management plans have, however, developed monitoring frameworks, indicating aspects by which project impacts will be monitored. As few projects have been implemented to date, conclusions concerning the nature and value of impact monitoring in WSM in Laos cannot yet be drawn. Proposals for standardization of indicators, methods, criteria have, however, often been made.

Achievements:
- For monitoring and impact assessment, the Government (MAF) has initiated establishment of a natural resource management information database at the Center for Information and Statistics in the department of planning. The center is now being structured and improved.

Remaining Issues:
- Information sharing and exchange between sectors considered a central requirement but strengthening and improvement is required.
- Provision should be made for monitoring related activities and budgets in all WSM related projects.
7. Financial mechanisms and incentives

National Policies state the significance of natural resource management and, in particular, integrated watershed management. Due to the state budget deficit, however, the Government has yet to allocate budgets specifically for WSM planning and implementation. Projects and activities integrating a WSM perspective being implemented in the country at present are mainly funded through overseas development assistance (ODA).

Achievements:

- Compensation schemes relating to water-use conflicts between upstream and downstream areas have already been implemented in Laos.
- The Nam Theun-Hinboun Hydropower Project, a private company, allocated funds to improve the livelihoods of people resettled as a result of the project. Detailed information on the mechanisms used is not, however, available at present.

Remaining Issues:

- Although several laws define the Government’s role in supporting the establishment of a protection/development fund and/or being accountable for the contribution of beneficiaries of an area or watershed to a management fund, no such fund has yet been established.
- The Nam Ngum watershed management planning project, supported by ADB, proposed establishment of a watershed management and development fund, to which hydropower plants should contribute not less than 1% of total revenues generated. Since its proposal in 1999-2000, no agreement has been made nor any progress achieved regarding this issue.

8. Conclusions

Policies and the regulatory framework in Lao PDR have been sufficiently developed to enable WSM planning and implementation. Agencies in several related sector have passed laws guiding development of resources in watershed areas and addressing related problems, such as resource shortage and degradation and overuse and distributional conflicts.

Institutional responsibilities for WSM are diverse and may not be clearly allocated. Further efforts are required to:

- translate international conventions into national laws and regulations,
- clarify responsibilities, division of work and lines of cooperation between national and provincial key actors, such as MAF and CPC,
- strengthen the role of government agencies in donor-assisted activities.

The current situation is characterized by a gap between theory and practice. Policies and plans as well as the legal and institutional frameworks deliver necessary guidance and present a multitude of (potential) actors. Activities currently taking place in watershed areas, however, suggest that little consideration is being given to watershed objectives. This results from a lack of government funding, low levels of know-how and poor cooperation among
involved agencies as well as insufficient definition of roles and responsibilities for field level implementation.

Although limited in scope, implementation experiences accumulated to date point in the same direction. WSM-related projects, for the most part sponsored and co-managed by donor organizations, that have involved local populations in planning and decision-making, have in some cases been successful. Dissemination of experiences, replication and broad-based application has, however, not yet taken place.

To ensure greater sustainability and replicability of such WSM projects, capacity building measures are of crucial importance as Laos severely lacks well-trained staff to implement the numerous existing plans. Experience from recent training activities showed that the linkages between training programs and the decision-making levels require strengthening. Actors relevant to the administration and planning of WSM should participate and basic WSM features should be integrated into training activities in other sectors.

A key issue for the future of WSM in Laos will be the development of sustainable funding mechanisms. To a greater extent than in most neighboring countries, WSM activities in Laos rely on external assistance. If, as is hoped, a specific budget for WSM is allocated, it should be made clear that this fund does not compete with, but complements, or better, replaces donor contributions. As long as external assistance is required to maintain watershed functions, donors should assist the government’s taking lead and undertake concerted efforts to coordinate activities and integrate them into ongoing government programmes. Whether these goals will be achieved depends again on progress made in consolidating the various planning approaches and plans within the government structure, as well as between the internal and the external actors.
The Status of Watershed Management in Thailand

Part I - Summary

1. Enabling regulations

Thailand has signed the international conventions on Biodiversity, Climate Change and the Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Marine Life Conservation, Ozone Layer Protection, Wetlands and the 1983 and 1994 International Tropical Timber Agreements. For associated issues, national bodies have been appointed to guide translation of the respective conventions into national policy. For example, the Office of National Resources and Environmental Policy and Planning (ONEP) has been designed as the National Biodiversity Reference Unit (NBRU) to the ASEAN Regional Center for Biodiversity Conservation (ARCBC).

Policy regulations relating to WSM can be traced back to the 1950s. Since then, WSM related issues, especially land use/land reform and forest conservation/rehabilitation, were addressed repeatedly in the five-year National Economic and Social Development Plans. Whilst the early plans focused on infrastructure, rural development and industrial and agricultural production, the two most recent plans emphasized capacity building, economic restoration, ecological rehabilitation and involvement of stakeholders from lower administrative levels.

The recent strategic plan, the 9th NESDP (2002-2006) on natural resources and environment, defined 4 main WSM objectives:

- Natural resource and environmental management/administration reform to promote efficiency, transparency and greater participation;
- Conserving/rehabilitating natural resources to maintain forest land at not less than 25% of the total land area and extending activities in land/soil fertility improvement;
- Protecting, rehabilitating and conserving the environment in all sites of importance to the national cultural heritage.

Legal consideration of watershed management in Thailand can be traced back to 1975 when the Urban Plan Act 2518 B.E. (1975) was approved by parliament. Land-use planning approaches in terms of land development have been promulgated since 1960 to improve and restore agricultural land and environmental conditions. In addition, the cabinet has approved many resolutions aimed at solving complexities related to social, economic and environmental issues, particularly in upland and highland watersheds.

The main challenge to be addressed at present is to effectively translate regulations prescribed in International Conventions signed by Thailand into national laws and regulations.

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2. Institutional framework

More than 30 Thai government agencies are involved in watershed management. At the central administrative level the Ministry of Natural Resources and Environment (MONE) plays an important role in the overall planning of watershed management, while the Provincial CEO (formerly the governor) is responsible for implementation.

To avoid conflicts caused by overlapping responsibilities, the Department of Water Resources (DWR) recently established the Watershed Administrative Organization (WAO), which combines divisions that formerly competed for influence in WSM planning. This task force will assist resolution of water resource problems through adoption of watersheds as the unit for participatory planning and implementation. Simultaneously, the Watershed Administrative Committee (WAC) has been established to form policies and coordinate plans for water resource management covering issues including utilization, conservation and allocation of water, prevention and alleviation of floods and droughts and reduction of pollution.

A number of key challenges are commonly recognized:

- Cooperation among the than 30+ agencies dealing with WSM should be further enhanced.
- The newly created facilities, WAC and WAO, have still to prove that their establishment marks significant progress in the institutional landscape related to WSM in Thailand.

3. Consistencies in planning processes

Watershed management planning officially began in 1975, when the Ministry of Agriculture and Cooperation (MOAC) proposed to the cabinet that the Mae Ping watershed should be classified according to three classes: head watershed, commercial forest and agricultural area. In 1979, a macro level land use planning exercise using five watershed zones was implemented by Kasetsart University with funding from the National Economic and Social Development Board (NESDB) and the World Conservation Union (IUCN).

In 2003, the DWR formulated plans for 25 major river basins following a participatory approach. Sub-committees on water resources development were established and members were appointed for each main watershed to collaborate in all dimensions of planning, implementation and monitoring.

With respect to long-term watershed management schemes, in 1996 the cabinet approved a twenty-year planning period (1997-2016) for the Policy and Prospective Plan for Enhancement and Conservation of Natural Environmental Quality. The plan will serve as to guide policy for all concerned government agencies and state enterprises and comprises six main policy areas: Natural Resources, Pollution Prevention, Natural and Cultural Environment, Community Environment, Environmental Education and Promotion and Environmental Technology. The last decade has witnessed more concerted efforts in strengthening people’s participation by integrating bottom-up approaches into WSM plans.

There are, however, some issues that remain:

- The intersectoral nature of WSM is not yet sufficiently reflected in the multitude of existing WSM planning approaches.
• Top-down and bottom-up approaches exist side by side, but do not yet complement one another.

4. Implementation experience

Experience gained through project failure and success has been incorporated into recent watershed management approaches. Over the past decades there has been a shift from one-dimensional sector-specific approaches to more comprehensive perspectives, acknowledging interrelationships among stakeholders and the importance of holistic or systems approaches. Furthermore, lessons learned in many projects led to emphasis on participatory approaches.

A recent example in which participatory WSM was successfully applied is provided by the upper Nan Watershed Project in Northern Thailand, which was implemented between 1996 and 2003. The strategy employed made use of collaborative planning, a village development fund, 3D modeling, GIS and GPS as tools for planning and monitoring. Besides this, the project set up village watershed networks to enhance understanding of the role of natural resources and to facilitate conflict resolution.

In the northern sub-watershed of Nam Sa, conflict between midland and upland tribes related to unsustainable land-use practices were leading to rapid forest and environmental deterioration. An incremental strategy to reduce social conflict through "micro-watershed land committees" and "networking resident community groups" was established and organized through a coordinating forum. Tools such as 3D modeling and maps and ecological information improved villagers' understanding of the importance of upstream-downstream linkages in their watershed area. With technical assistance from the RFD and in cooperation with the midland Karen people, Hmong and Lisu tribes began to abandon shifting cultivation on steep slopes and to begin upland forest protection and lowland irrigated paddy cultivation. Decentralized control of defined micro-watershed areas by organized local hamlets has reduced threats of fire, illegal logging and upland erosion and has also resulted in impressive natural forest regeneration.

Experiences gained to date suggest that the following issues need to be addressed:

• Systems relating to documentation of experiences need to be improved;
• WSM implementation should carefully consider the local environment and cultural conditions of the target group.

5. Capacity building

Historically, technical issues including silviculture, entomology and forest hydrology, etc. have emphasized in national forestry research programmes. Three keys areas supporting successful implementation of national watershed management programmes merit particular attention and support in the future:

• Socio-economic and legal issues (e.g. the changing role of non-timber forest products in rural hill-tribe economies and the opportunity costs of labor in diversified rural economies);
• The hydrological and micro-meteorological effects of land-use changes in upper watersheds;
• Environmental and economic assessment of forest management options in upper watershed forests (encompassing market prices, contingent valuation method, etc.).
Training and extension are limited owing to the small scale of target areas in the field. Various approaches, including participatory land-use planning and watershed networking and fora have been applied to improve community awareness of sustainable watershed management. A manual for the chief of the watershed management unit, WCMO has been compiled to guide participatory development. However, an extensive programme of training, and particularly "training of trainers", is still required to increase participation in watershed management at a larger scale and to broaden WSM related education.

6. Impact monitoring

The results of environmental impact monitoring based on information reported by the Office of National Resources and Environmental Policy (ONEP) during 2002-2003 can be summarized as follows:

- Soil erosion covers an area of 100 million rai (16 million hectares). The most severe areas of erosion are in the northern region;
- In 2002, forest reserve and recreation areas totalled around 57.78 million rai (9.2 million hectare) or 18 percent of the total land area. After logging concession were banned in 1989, the annual deforestation rate declined from 2.9 million rai to 1 million rai per year;
- In 2002, 62 provinces were reported to have encountered water shortages. The problem affected 1.3 million households and around 5.7 million people. In the same year, there were 12 floods reported during the rainy season.

Impact monitoring in relation to the following issues needs to be improved:

- Impact monitoring activities are scattered around the country in various projects and collection, analysis and presentation of data are neither comprehensive nor coordinated.
- Different projects apply different impact monitoring standards and criteria making comparison and aggregation of data and information difficult or impossible.
- Thailand currently focuses on environmental impact assessment and monitoring of other aspects, such as socio-economic issues, should be strengthened.

7. Financial mechanisms and incentives

In past years budget allocation for all kinds of water resource development projects has fluctuated between 15 and 28% of Thailand's fiscal budget. A certain amount of funding for watershed management is also derived from this source, and complemented by very limited amounts from the private sector.

The Royal Projects have invested a large amount of money in encouraging highland populations to utilize watersheds for self-sufficiency by growing cash crops and fruit-trees using intensive soil and water conservation techniques. Today, the project, which works from 28 extension stations has benefited nearly 300 upland villages and affected the lives of at least 50,000 people.

In 2003, the ASEM Trust Fund approved a Technical Assistance Funding Proposal of US$ 700,000 for “Participatory Watershed Management in the Ping River Basin”. The technical assistance is aimed at supporting and strengthening participatory approaches in integrated watershed management in the Ping River in Northern Thailand. The development objective is to improve environmental
quality, which, in turn, will contribute to enhancing the livelihoods and health of the involved communities.

According to the recently published “Thailand: Environmental Policy Integration Analysis Report”, the establishment of 8 river basin management committees, with technical support and basic information, would cost less than $0.6 million per annum. This does not include natural resource management costs and planned agricultural development programmes. ADB will facilitate and support the reform process and assist with capacity building and training of regulators and stakeholders.

An issue that needs to be addressed is that although donor-and government assisted watershed projects have been underway in Thailand for nearly three decades, the situation has worsened in every basin during this period. Internal and external contributions should therefore be more clearly directed to achieve the desired impact, which requires strict monitoring of impacts and joint management by all stakeholders.

8. Conclusions

Unlike other countries in the region, Thailand has a long history of WSM activities. Watershed perspectives have been part of the National Economic and Social Development Plans (NESDP) since the first NESDP was launched 1961. Since then, the main WSM related resources – land, water and forest – have been the subject of various allocation, use and conservation plans.

The legal and institutional framework built up in these years is wide-ranging and has some internal contradictions. Recently implemented organizational reforms leading to creation of the Watershed Administrative Committee (WAC) are too new to be evaluated. They do, however, indicate that there is political will to prioritize watershed issues and re-arrange the institutional landscape accordingly.

In similarity with neighboring countries, WSM in Thailand is, to a large extent related to managing the environmental and economic conditions in highland communities. Given their importance, land tenure and land-use interventions have received special attention. However, there needs to be even greater emphasis placed on complementarity between top-down and bottom-up approaches. Thailand has a great diversity of experience in implementation, which documents the importance of local communities and their needs and knowledge in the success of WSM. This lesson should be considered during both planning and implementation.

To induce such a process change and ensure its sustainability, Thailand must reinforce efforts in education and training. “Training of trainers” is especially neglected at present, and this means that new trends and developments may not be disseminated into the WSM-system soon enough to cope with the rapidly approaching challenges.

The fiscal budget of Thailand exceeds those of its neighbors by far. A considerable amount of this budget has constantly been allocated for all kinds of water resources development project. Besides this, donor-assisted watershed projects have been underway in Thailand for nearly three decades. WSM related problems have, however, worsened during this period. Internal and external contributions should therefore be more clearly directed to maximize impact and impact assessment and monitoring should be carried in tandem with implementation.
Thailand’s advantage is its long experience in dealing with watershed issues. If the results and outcomes of four decades of watershed related activities are analyzed more thoroughly than they have been at present, lessons learned could inform an approach to help cope with the challenges of the future. This would also provide a great opportunity for neighboring countries to learn from Thailand’s experiences and avoid repeating mistakes.
The Status of Watershed Management in Vietnam

Part I – Summary

1. Enabling regulations

Over the past 10 years, Vietnam has been actively participating in International Conventions related to Watershed Management. Vietnam has signed five such conventions and, step by step, related contents are being institutionalised into the national policy system.

Since 1995, Vietnam has been in the process of implementing 5 National Programmes related to watershed management and has issued numerous policies at the national, local and sectoral levels (at least 5 codes and tens of under-law documents of the Government and sectors). In addition, over 40 mountainous and midland provinces and districts have placed watershed management as a main priority in their socio-economic development strategies up to 2010.

The policy system has adopted an integrated, inter-sectoral and inter-territorial watershed management approach. This approach ensures harmonious linkages between top-down orientations and bottom-up needs and improves stakeholders’ participation in the planning, implementation, monitoring and evaluation. In pursuing the policy system the government has begun to decentralize watershed management, whereby the Central level is responsible for direction and state management via the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Natural Resources and Environment (MONRE). Outside the central level, and particularly at the provincial and inter-provincial levels, implementation of the content of watershed management plans has been strengthened.

Existing regulations do, however, have some weaknesses including:

- The lack of clarity in regulations on integrated planning and management of watershed elements (forests, water and land) and use of these elements by different sectors and at different levels;
- The lack of regulations concerning responsibilities and benefits of stakeholders in upstream and downstream areas, and between different sectors;
- The lack of a mechanism linking the River Basin Planning Management Board at the central and provincial levels with lands in the river basin.

2. Institutional framework

In recent years, the Vietnamese Government has completed reforms in management and organization. Orientation and state management of watershed management activities has been assigned to MARD and within MARD, the Irrigation Department is directly responsible for state management. A River Basin Planning and Management Office established under the Irrigation Department is responsible for management of all local River Basin Planning and Management Boards.

The three main natural resources relevant for watershed management are water, land and forest and although the Irrigation Department is the watershed management agency, the authorities managing these resources are under the
responsibility of different institutions. Thus, water-use is under the Department of Water Resources Management (under MARD), land management is delegated to the Land Department (under MONRE), forest management and development are under the Forestry Department and forest protection is under Department of Forest Protection of MARD.

Organization and implementation of the following watershed management activities are decentralized to the provinces:

- planning for management of watershed areas which have a protective role for rivers and reservoirs within the provincial territory,
- organization and implementation of water source protection and development activities,
- water use,
- land management and
- socio-economic development.

Decentralized activities are implemented by specific organizations. The Forestry Sub-Department, under the Provincial Department of Agriculture and Rural Development (DARD) and the Forest Protection Sub-Department, under the Provincial People’s Committee, are responsible for forest protection and development and the Protection Forest Management Board, under the Provincial People’s Committee or Provincial DARD, directly manages protection forests. Several provinces have Watershed Management Boards under the Provincial People’s Committee. Currently there are no specialized watershed management institutions at the district level. Furthermore and non-state-owned organizations provide support through development projects in watershed areas but are not involved in watershed management.

The challenges faced by the institutional and organizational system include the following:

- Management of watershed areas by state-owned institutions has only recently been devolved to provincial level and, at present, the capacity (including human resources) of these institutions is insufficient to meet requirements;
- River Basin Management Boards are ineffective in settling inter-provincial watershed issues.
- Due to sectoral decentralization, there is no inter-sectoral agreement on protection, development and utilization of watershed elements (land, forest and water).

3. Consistencies in planning processes

The watershed management planning system in Vietnam consists of regional and territorial planning combined with sectoral planning. Regional and territorial planning includes: river basin planning, which is being developed at the central level (MARD), and socio-economic development planning (10 years), which is being developed by at the provincial, district and commune levels. Based on a master plan, every province develops watershed management plans for each river and reservoir within its territory. Sectoral planning related to watershed management includes land use planning, agricultural planning, forestry planning and water resource planning. Linkages with provincial watershed management planning are clear given that the same four components are followed. These linkages are, however, not applied in watershed management planning at the district and commune levels.
Provincial, district and commune planning entails the “two down one up” process whereby the higher level directs, the lower level develops plans and the higher level approves. Provincial and district planning is jointly developed by representatives of different sectors and of local communities. Planning at the commune level uses Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA) methods.

Although the watershed management planning system is developed in its basics, there remain some problems to be solved:

- There is no clear identification of the agency, particularly at provincial level, which has appropriate authority for coordination and implementation of watershed management plans;
- There is no clear relationship between river basin planning processes and plans developed by the River Planning and Management Board and by provincial planning processes and plans for watersheds within the provinces;
- No regulations and methods exist for monitoring and evaluating implementation of watershed management plans by different sectors;
- Watershed management planning and implementation are not fully implemented at the community and commune levels or even sometimes at the district level.

4. Implementation experiences

Land and forest allocation is carried out in two forms: (i) state-owned institutions (district level upward) grant long term land use certificate (up to 50 years for forest land and 20 years for agricultural land); (ii) contracts on utilization and protection of land and forest are issued by state-owned forest enterprises (for land and production forests) and forest management boards (protection and special-use forests). The latter form is often applied in watershed areas.

After land is allocated according to five rights (land use, transfer, renting, inheritance and mortgage), use of land contributes more effectively to economic, social and environmental goals (increasing income, generating jobs and conserving soil and water resources). Agroforestry, Sloping Agricultural Land Technology (SALT), Forest-Garden-Fish Pond-Pigsty models (RVAC) and Community-based forest management contribute to these aims and are popular in watershed areas.

Forest Management Boards and Reservoir Management Boards, besides their responsibilities for management, protection and development of protection forests, special-use forests and water resources, have included eco-tourism amongst their business activities. The Government has also strengthened investment in watershed areas through the 5 Million hectare Reforestation Programme and Poverty Reduction Programme, Programme 135 in rural infrastructure development, which targets 2500 of the poorest communes in remote areas.

Several issues remain to be solved:

- Land and forest allocation to local communities is not yet legally acknowledged, while in watershed areas, community-based forest management by ethnic groups is already a popular practice and has many advantages;
Vietnam has been developing 50 protection forests with a total area of 5.6 million hectares, but there is no clear strategy promoting constructive relations between the forest management board and local communities regarding forest resource use;

There are no studies available that have evaluated experiences and lessons learned in community-based management and use of land, water and forest resources in watershed areas.

5. Capacity building

There are three main gaps in watershed management research: (i) the relationship between upstream and downstream areas and between regional and provincial areas; (ii) modes of effective, consistent and integrated management of land, forest and water in watershed areas; and (iii) policy mechanisms appropriate for communities involved in watershed management. The research system is highly divided by topic, theme and content and also in terms of organization involved. Research on relatively narrow topics is therefore implemented by specialized research institutions and there is no comprehensive watershed study and research programme at the national level.

Training and education in watershed management and some related subjects have recently been integrated into curricula at the Water Resource University and Vietnam Forestry University. These institutions do not, however, offer a watershed management specialization or watershed management as a major subject and there are few staff specialized in watershed management and no refresher programmes available to them. Several short courses in watershed management have, however, been organized by foreign-assisted organizations.

The state agriculture and forestry extension system was established from the central to the district level with about 5000 regular extension workers, i.e. only 1 for every 12,000 farmers. An extension system continuing to the community level is being established but has not yet been fully institutionalized. At present, there are no non-state-owned organizations providing agriculture and forestry extension services and agriculture and forestry extension activities are more concerned with technology transfer, e.g. seed/seedling distribution, land-use, plant protection and plantation, cultivation and management techniques.

There are several remaining issues in this field:

- Training materials and training courses on watershed management are not appropriate in either quantity and quality.
- Agriculture and forestry extension activities are insufficiently linked and coordinated with watershed management objectives.

6. Impact monitoring

The River Basin Planning Management Office, under MARD, is the monitoring agency for specialized activities in watershed management, including: the master plan and planning and implementation carried out by the River Basin Planning Management Board and the provinces. Impact monitoring is conducted by the

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1 National Centre for Agriculture Extension and Forestry Extension Board under MARD, Provincial Agriculture and Forestry Extension Centre under Provincial DARD and District Extension Unit under District DARD
Environment Department, under MONRE, through the standard national system for environmental management.

Points to be improved in this field include:

- Systems of standards, criteria, indicators and methods should be appropriate for evaluating the impacts of human activities in watershed areas;
- A multiple objective system should be established for watershed management planning. The impact monitoring system should integrate objectives and indicators related to poverty reduction and sustainable development;
- A monitoring system in line with international standards should be established for each river basin.

7. Financial mechanism and incentives

Although financing is mainly provided by the state, financial mechanisms for watershed development comprise: (i) direct state budgets for planning and management of river basin and watershed areas in provinces; (ii) state budget through national programmes and projects for implementation of watershed development activities, (iii) state preferential credits for production enterprises in areas where watershed protection objectives are targeted, (iv) financial support for watershed development from international organizations and foreign governments (ODA) and non-governmental and private organizations, (v) transfer payments from institutions and organizations in areas benefiting from protection of upstream areas. Of these mechanisms, items (iii) and (v) as yet play a very limited role. At present, the government is encouraging investment in areas including construction of hydropower works in Dak Lak, Ha Giang and Lao Cai provinces, development of ecotourism, establishment of industrial forests on production land to meet watershed protection and production objectives according to the “Protection through Production” principle.

Issues to be addressed regarding financial mechanisms include:

- Establishment of a credit mechanism for watershed area development;
- Introduction of reimbursement (transfer) mechanisms through which beneficiaries contribute to a fund for watershed development;
- Encouraging policies from the provincial administrations to attract investment for construction of hydropower plants and other infrastructure works in watershed areas.

8. Conclusions

Watershed areas, as they are defined here, cover two thirds of the area of Vietnam and play an important role in socio-economic development of mountain and river basin areas. Watershed areas face many difficulties and challenges stemming from the complexity of natural conditions, low levels of economic development and natural resources degradation amongst others.

Watershed management has gained attention from national and local governments. The national government has provided increasing support for development of a policy and institutional framework assisting the sectors and provinces with economic development in watershed areas. Within the institutional framework there are, however, shortcomings to be solved. These include the lack of clarity over responsibilities, distribution of benefits and linkages between national and local organizations in integrated watershed management.
The Vietnamese government has gradually established organizational structures to manage watershed areas. However, organizational capacity is currently insufficient to facilitate effective watershed management and development. Separation between lines of management for different natural resources in watershed areas and lack of consistency in integrated management has development in watershed areas. Sectoral and territorial planning approaches, which currently cut across each other without identifying common areas, need to be adjusted and coordination of management, funding and implementation between key actors needs to be improved. The current decentralization process, which endows provincial administrations with additional competences, is seen as a major step in this direction.

Vietnam has understood the importance of planning and has adopted an integrated, multi-disciplinary planning approach with the participation of various stakeholders. However, many weaknesses have been revealed in watershed planning and management. A common issue in planning is the need for harmonization of watershed and local plans, especially those of the provincial agencies. Furthermore, the roles of communities living in watershed areas in the planning process for watershed management are currently vague and implementation of plans is not coordinated or monitored and impact assessment does not take place. Responsibilities related to managing the implementation of watershed plans are also not yet clear.

Although experience concerning the productive management and utilization of water, land and forest in watersheds abounds, there is a lack of experience of sustainable management and several issues regarding tenure of watershed resources are still outstanding. A monitoring and evaluation system has also yet to be formulated or institutionalized.

Difficulties related to human resource development for watershed development are also hampering progress. Although Vietnam has a fully developed and widespread system of universities, colleges and vocational schools for agriculture and forestry, watershed management training, as a separate issue, has not yet been addressed. This has largely been due to a shortage of knowledge, methods and staff.

Mechanisms for funding and financial management of watershed related activities are not consistent among sectors. The development of watershed areas is mainly sponsored by government budgets. However, budgets are allocated through a range of different channels, and there is therefore little consistency or focus in investment and development in watershed areas.

The foregoing provides a picture of the current situation, achievements and limitations in watershed management in Vietnam. There have been many achievements but there are also many challenges including the improvement of the legal framework and development of sound institutions, proven methodologies and strong leadership. Improving the consistency and security of investments and promoting cooperation among people, agencies and countries sharing watersheds are further pressing requirements.
The Status of Watershed Management in Cambodia, Lao PDR, Thailand and Vietnam

Part II – Extended Version
0. Introduction

Cambodia is rich in water resources but is also heavily dependent on them for agriculture, fisheries and, to a much lesser extent, hydropower generation. Watershed Management (WSM) is, however, a relatively new concept in Cambodia. Awareness has recently been increasing that problems in lowland areas, such as decreasing fish stocks in Tonle Sap, may be related to activities in upper watersheds, such as chemicals use for agriculture or land and forest degradation. In recent years, consensus has developed that clear mechanisms and procedures are required to allow negotiation of watershed management issues by stakeholders in the riparian countries. This resulted in the issue of a Royal Decree on WSM in December 1998. The decree outlined the importance of protecting natural resources in watershed areas and also instructed the Government to institute further sub-decrees on WSM.

A major factor in watershed management is forest cover. In Cambodia, forest cover decreased between 1973 and 1993 by about 70,000 hectares per year and then by about 180,000 hectares per year between 1993 and 1997. There are indications that the trend is being halted or reversed following the 2001 logging ban. However, there is still fear of continued reduction in forest cover due to demands placed on forests in the form of fuelwood extraction, agricultural encroachment, land development and illegal logging. These issues will increasingly endanger many of the major watershed functions.

1. Enabling regulations

1.1. International Conventions and regulations

Cambodia has adopted a range of international conventions aimed at protecting its extensive environmental resources. The international environmental conventions signed by Cambodia include: the Convention on Biological Diversity, the Convention on Climate Change, the Convention on Wetlands of International Importance (RAMSAR Convention).

Convention on Biological Diversity: In 1995, Cambodia became a signatory to the Convention on Biological Diversity (CBD). In 1997 a National Biodiversity Prospectus was prepared as a guide and framework for a National Biodiversity Strategy and Action Plan. The National Environmental Action Plan (NEAP) 1998-2002 was adopted in 1997 but gave limited coverage to biodiversity issues, particularly in the key areas of forestry and fisheries.

Convention on Climate Change: The UNFCCC was ratified in 1995 with the objective of regulating levels of atmospheric greenhouse gas concentration to avoid climate change to an extent harmful to economic development and food production. Currently, a GEF-funding is available to assist Cambodia in meeting the requirements of the Convention (Cambodia Biodiversity Status Report, 2001).
Convention on Wetlands of International Importance (Ramsar Convention): Cambodia’s National Assembly approved a ministerial request to accede to the RAMSAR convention and, in 1999, became a Contracting Party to the Convention. The aim of the Ramsar Convention is to limit the progressive encroachment upon and loss of freshwater and coastal wetlands. Three sites in the Mekong basin in Cambodia have been proposed as Ramsar sites.

1.2. National Policy

Ministries, NGOs and donors have made significant efforts to ensure that natural resource issues are addressed and that appropriate actions are identified in national policies and strategic planning processes. The most important legal documents governing management and protection of natural resources relating to watershed management in Cambodia are as follows:

Laws and Regulation of current legal status:
1. Royal Decree on Watershed Management (December 1998),
2. Royal Decree on the Establishment and Management of Watershed Areas in the Kingdom of Cambodia (11 January 1999),
3. Forestry Law (2001),
4. Sub-decree on Community Forestry (2003),
5. The Land Law (2001),
6. The Law on Commune Administration (2001),
7. Law on Environmental Protection and Natural Resource Management,
8. Sub-decree on the Management of Protected Areas and National Parks.

Laws and Regulations pending:
9. Sub-Decree on Watershed Management by MAFF,
10. Sub-Decree on Watershed Management by MWRMM,
11. Draft Law on Fisheries,
12. Draft Sub-decree on Community Fishery,

Although these laws, sub-decrees and drafts clearly state institutional roles and responsibilities, there is some confusion resulting from overlapping jurisdiction between technical departments and/or unclear rules and responsibilities governing line agencies. For instance, the MAFF draft sub-decree on watershed management states that MAFF responsibility for the management of forest resources within watershed areas under the jurisdiction of the Forestry Administration. The MWRM draft sub-decree on watershed management states, however, that the Ministry is to act as secretariat for a watershed management committee and that the MWRM Department Water Management and Conservation has authority to manage the watershed as a whole (Article 12). Moreover, the fact that some policy and legislation such as the Protected Areas Law, the Law on Fisheries and the sub-decree on Community Fishery have not yet been passed creates a legal vacuum in which stakeholders cannot negotiate the proper use of resources.

An important issue in Natural Resource Management concerns legal provision for people’s participation. The current legal framework does not, however, provide sufficient legal basis to allow adequate participation in NRM. According to the
decentralization policy, the involvement of stakeholders in natural resources and environmental management at the local level is supposed to take place under the Commune Councils. However, in most cases, this is not yet institutionalized due a lack of practical regulations (Prakas) and funds for implementation. Therefore, clear guidelines and regulations for people's participation in watershed management and related issues need to be incorporated into the legal framework.

The RGC is shifting its focus from further elaboration of new laws and regulations to enforcement and implementation of the existing legal framework as it has become increasingly evident that legislation without enforcement has little impact.

2. Institutional framework

The key agencies actively involved in watershed management in Cambodia include:

1. The Forestry Administration (FA), (previously the Department of Forestry and Wildlife) and the Department of Planning, both belonging to the Ministry of Agriculture, Forestry and Fisheries,
2. The Department of Water Resources Management and Conservation of the Ministry of Water Resources and Meteorology (MWRM),
3. The Department of Nature Conservation and Protection of the Ministry of Environment (MoE)
4. The Department of Land Management of the Ministry for Land Management, Urban Planning and Construction (MLMUPC),
5. The Ministry of Rural Development (MRD),
6. The Ministry of Women’s and Veterans Affairs (MWVA),
7. The Department of Administration of the Ministry Interior (MoI),
8. The Cambodian National Mekong Committee (CNMC).

A number of institutions are currently competing for roles in the management of natural resources and WSM. The roles and responsibilities of the relevant agencies and the mechanisms by which they contribute to watersheds management are still unclear.

There is no institution or agency that has an official mandate to coordinate watershed management-related activities for the country as a whole. With respect to the Mekong watershed (covering 86% of the total area of Cambodia), the Cambodian National Mekong Committee (CNMC) plays an important role in coordinating and supervising management and in liaising with the MRC and government agencies. The MRC National Technical Working Group on Watershed Management also operates under the CNMC.

At the local level (Province, District, Commune) the Ministry of Rural Development has the official mandate to coordinate rural development. In recognition of the need for inter-sectoral co-ordination at the provincial level, Provincial Rural Development Committees (PRDCs) have been established. The PRDCs are concerned with general development issues in rural areas, but have no specific mandate to address watershed management issues.
As the Cambodian administrative and political system has had to recover from long years of war and political instability during the last decade, national and provincial level government institutions are still facing numerous problems and constraints. In areas such as human resources, law enforcement and financial management, the government system is still in its infancy and there are currently very few government officers with an understanding of watershed or natural resource management.

A lack of good governance and government authority as well as a lack of resources also hampers policy implementation and regulation enforcement. A core problem spanning all sectors is that the government cannot afford to pay sufficient salaries to its officers. As a result, Government officials are forced to find other ways of supporting themselves and corruption consequently widespread at all levels.

The situation is partly improved in externally assisted projects through substantial supplementary salary payments to government officers. This, however, leads to high dependence on externally funded projects in almost all fields of development including those related to WSM.

3. Consistencies in planning processes

The National Poverty Reduction Strategy (NPRS) of December 2002 was drafted through a participatory process including government agencies, NGOs, development partners and the private sector. The NRPS is aimed at guiding the development process in Cambodia and assisting the prioritization of external funding. In the NPRS 2002-2005, however, watershed management is barely mentioned and is not specifically addressed in priority actions. This suggests that the causal relationship between watershed degradation and poverty is not generally acknowledged and that WSM is therefore currently not considered a priority.

Central level sectoral government agencies have developed their own planning procedures. At the local level, following the first Commune Council elections in 2001, a comprehensive system of District and Provincial development planning is being introduced. Under this system, the key stakeholders are increasingly being involved. Commune Councils should also play an important role in the participatory management of natural resources in their area. This role has, however, not yet been implemented on a large scale due to time, fiscal and human resource constraints.

At the local level, NGOs and Civil Society Organizations also play an important role in natural resource management as well as in strengthening bottom-up planning processes. This has been acknowledged by the government through the establishment of NGO Liaison Officers within the Provincial Department of Local Administration. The NGO Liaison Officers serve to enhance communication with civil society organizations over issues such as decentralization, local governance and NRM and also act to promote government-civil society partnerships.

The Ministry of Land Management Urban Planning and Construction (MLMUPC), in cooperation with agencies such as MAFF, MoE, MoI, MRD and FA, has the mandate to create a land demarcation master plan, which includes delineation of state and private land as the main task. In their areas of sectoral responsibility, the respective agencies must then develop detailed land-use and development plans and facilitate their implementation.
In terms of area-based planning, land use planning is a new concept for Cambodia. A national level Master Land Use Plan will be introduced in the near future with the assistance of an EU-funded project (ROCK 2004). As National level plans are top-down by nature, complementary bottom-up planning processes are required. The approach and methods used in Participatory Land Use Planning (PLUP see Part III, Annex 1 for details) have been successfully tested in Community Forestry, Community Fishery and CBNRM projects and have the potential to play an important role in bottom-up land-use planning.

4. Implementation experiences

Cambodia does not have direct experience in watershed management although various programs contain watershed management-related elements and activities, as summarized in the following sections.

**SEILA**

The SEILA program of the Royal Government of Cambodia is a national effort to reduce poverty through improved local governance. It is supported by the multi-donor-assisted “Partnership for Local Governance” (PLG) as an aid mobilization and coordination framework supporting the Government’s decentralization and administrative reforms. By 2005 SEILA coverage will extend to 17 of 24 provinces and to 1,216 rural communes, representing 84% of all rural communes in the country. The systems, procedures and processes piloted under SEILA are being institutionalized by the National Committee to Support the Communes (NCSC) through formulation of a regulatory framework for decentralization. The Royal Government is also currently defining a policy framework for deconcentration that will receive input from the SEILA. Included in the design of the SEILA program are the three cross-cutting issues of gender, natural resource management and poverty alleviation, each of them requiring strategic focus within the program.

The SEILA Program offers a unique opportunity to place NREM issues in the mainstream. As part of SEILA, the Natural Resources and Environmental Advisory Group (NREAG), involving line ministries and departments at the national and provincial levels, was formed to strengthen and effectively manage the decentralized Natural Resource and Environment Management Project. The project is funded by DANIDA through the multi-donor programme “Partnership for Local Governance”. Provincial line agencies in the field of NRM are working through Provincial Rural Development Committees (PRDC) with the newly elected Commune Councils via an inter-departmental technical facilitation team. Selected Commune Councils integrate sustainable NREM into their development plans and commune fund investments. This type of inter-agency co-operation and co-ordination hardly takes place in Cambodia other than where promoted and supported by foreign-funded projects.

**Community Forestry (CF) and Community Protected Areas Development (CPAD)**

In recognizing the importance of participatory natural resource management, the Royal Government of Cambodia has endorsed the Forestry Law and the Sub-decree on Community Forestry. Subsequently, successful community forestry pilot projects have been carried out in a few selected Provinces. Until now, community forestry areas have been established in more than 143 communities within 15 provinces covering 100,174 ha of forest land (CF database-FA 2002).
In addition, a total of 169 Community Protected Areas have been established within Cambodia’s National Protected Areas, of which 24 have been approved by the Ministry of Environment (MoE 2004: Summary of CPAD in National Protected Areas, December 2003).

The Community Forestry Working Group (CFWG - see part III, Annex 2) played an important role at the national level in coordinating stakeholders and promoting participatory processes in forest resource management. The working group was composed of representatives of various national level agencies, including FA, MoE, RUA as well as projects and NGOs. The group provided a national level forum for interested people and organizations to exchange experiences and work together to support community forest management. The main activities were to improve collaboration, inform and influence policy makers, build capacity, increase understanding and gather and share information about community forestry. Guidelines for the development and implementation of community forestry (ADB TA-3152-CAM) have been prepared by contributors with governmental or non-governmental work experience and expertise in community forestry development.

**Community Fisheries**

Fisheries management in Cambodia has faced severe problems for many years amidst a growing trend for large-scale commercial exploitation and short-term revenue generation. This has created resource conflicts in many areas around the Tonle Sap Lake and in the Mekong River Basin. The majority of problems are caused by governance issues including corruption among local officials and law enforcers as well as inequitable distribution of economic benefits. These factors also result in low financial returns to government. While these problems continue to threaten food security in Cambodia, its ecological impacts are becoming more and more obvious as is the decline of certain fish populations. Partly as a response to declining access to natural resources, a movement for community-based management (also known as community fisheries or co-management) has emerged in Cambodia. Communities, with support from NGOs or government institutions, are establishing their own management plans and management areas, especially in the vicinity of their villages. Support for such an approach is growing and in 2002 there were 162 community fishery sites in Cambodia (McKenney & Tola 2002). The required legislation - in the form of a Community Fishery Sub-decree - has been drafted, but not yet passed.

**Participatory Land Used Planning**

Participatory land use planning (PLUP) was introduced to Cambodia in 1999 as a tool for sustainable resource management. A number of field experiments, mostly sponsored by NGOs and bilateral projects, have been undertaken at various locations. The Royal Government of Cambodia has demonstrated commitment to land ownership through recognition of communal land titles and has further plans to distribute land to needy people. PLUP should be incorporated into this process to ensure that the needs and rights of all community members are considered and guaranteed to the maximum extent possible.

Since PLUP requires multi-disciplinary teams, MLMUPC has to rely on close cooperation with other national and provincial level agencies in charge of natural resources, including the Forestry Administration (FA), Ministry of Environment (MoE), Department of Fisheries and various other line departments. The need for this kind of inter-agency cooperation has emerged as one of the main constraints in PLUP implementation.
PLUP can be used as a tool to facilitate local level planning processes for sustainable natural resource management in watershed areas and can also facilitate agreement on detailed regulations and management plans defined by local communities. PLUP can thus play a crucial role in Watershed Management.

So far, however, the aims of PLUP have been confined to optimizing allocation and use of local resources rather than dealing with the impacts of land use in other areas, e.g. upstream-downstream effects. To increase the usefulness of PLUP for local watershed management, this dimension would have to be included in the participatory planning process.

The aim of the three-year Project “Sustainable Management of the Kbal Chhay Watershed”, which began in early 2002, is the rehabilitation and optimized utilization of all natural resources in the watershed for the benefit of poor people in urban and rural areas in the municipality of Sihanoukville. The project is implemented through the Forestry Administration in cooperation with the municipality of Sihanoukville and with assistance from DANIDA. During the course of project implementation it became evident that many groups and individuals, from poor rural households to well-off private investors, placed demands on the resources within the watershed area. Furthermore, as the surface and groundwater resources of the Kbal Chhay watershed are crucial for Sihanoukville’s present and future water supply, the watershed became recognized as being of regional importance. In connection, the project has become an example of discussions concerning the level of planning appropriate to attain optimum benefits.

The FAO-assisted project “Participatory natural resource management in the Tonle Sap region” has established a number of pilot sites and has successfully developed and implemented community-based natural resource management of both fisheries and upland forests. Activities in Siem Reap are currently considered the leading model of community-based natural resource management in Cambodia. The third phase of the project (01/09/01-28/02/05) aims to consolidate approaches and experiences to facilitate transfer to other provinces. Some of the lessons learned from the project are:

- Community forestry members can directly direct benefits from forest resources through sale of NTFPs, pole trees and fish,
- Awareness of the need for sustainable use of forest resources is increased in local communities,
- Forestry officers may demand excessively high royalties for forest products harvested for sale from community forests and check points also extract money for transport of forest products,
- Problems that remain within the community fisheries sector include lack of legislation and lack of sufficient community empowerment to suppress illegal activities and control the exploitation of resources by outsiders.

5. Capacity building

Almost 30 years of civil strife left Cambodia with a generation having almost no formal education and an education system that had to be rebuilt from scratch; an almost insurmountable task for a government with very limited resources. Therefore, capacity building at all levels is high on the agenda of most development initiatives and the RGC and most donors are highly concerned about this matter.
As Watershed Management is so new to Cambodia, there is currently no agency mandated to conduct research on watershed management, and research relevant to WSM has seldom been conducted. Therefore, institutions responsible for drafting policies and building capacity in relation to WSM have no scientific data or information to rely on and no in-country experience. Instead they must depend on the transfer of external knowledge and experience from other outside.

The Royal University of Agriculture (RUA) and two Agricultural Colleges (Preak Leap and Rusey Veat) have mandates for higher education in the field of agriculture and natural resources management. Although RUA does not have an explicit mandate in the field of WSM, its research, as well its educational programs, focus on a number of WSM related issues. RUA curricula in most NRM related courses, however, urgently requires upgrading to meet international standards.

Other organizations and projects also play a major role in providing training courses, workshops and other learning opportunities in CBNRM. These events are designed to bring CBNRM supporters together and build skills and knowledge in a variety of facets that can be readily applied to local realities. The "learning-by-doing" approach gives people without a high level of skills the opportunity to learn as they go and share experiences with others.

Examples of projects with a focus on capacity building in relation to WSM are:

The UNDP-assisted Project "Capacity Building for Sustainable Development in the Tonle Sap Region" provides hands-on and more traditional training opportunities in community fisheries to the staff of Community Fisheries Development Offices (CFDO).

The "Community Protected Areas Development Office" (CPAD) provides technical assistance and guidance to Protected Areas Units and Provincial Departments of Environment to enable and encourage local participation in the conservation and management of protected areas. It is planned that CPAD will form the team to train relevant PA Management Units, PED non-governmental organization staff, local communities and relevant stakeholders. The team will develop their participatory training curricula with the support and participation of their partner organizations.

The project "Participatory Natural Resource Management in the Tonle Sap Region" has a rich variety of experience in community forestry and community fisheries and serves as a nationwide focal point for training in community-based natural resource management.

The Cambodia Community Forestry Training Team (CAMCOFTT) was established in 1998 in response to growing awareness that community participation assist forest management and accelerate rural development. CAMCOFTT comprised a collaborative training team of representatives from the Department of Nature Conservation and Protection of the Ministry of Environment, the Department of Forestry and Wildlife (now the Forestry Administration) of the Ministry of Agriculture Forestry and Fisheries and the Faculty of Forestry in the Royal University of Agriculture. The main objective of CAMCOFTT was to provide, organize, facilitate and support training for community forestry initiatives throughout Cambodia. Various international NGOs and projects provided financial and technical assistance to CAMCOFTT. Unfortunately, the team was terminated in late 2001 owing to financial constraints and competition for ownership.
InWENT, the capacity building organization of German Development Cooperation, with support from MRC/GTZ and the German Volunteer Service (DED), conducted a first **WSM Training Course** in Cambodia in November 2003 for staff from line ministries and NGOs. A second training course is planned for October/November 2004. Specific objectives are for participants to understand new concepts in watershed management, to interpret and assess data related to natural resources and socio-economics, to identify baseline information required for WSM, to classify and compare various procedures and tools for integrated WSM and to prepare process-oriented action plans for sustainable WSM.

**Training in Participatory Land Use Planning (PLUP):** four PLUP national workshops were conducted by MRC/GTZ-SMRP between 1999 and 2002. The results of the workshops, including experiences outside Cambodia, were documented and a PLUP manual for Cambodia was produced in 2002. Training of trainers in PLUP was also successfully conducted (PLUP 14 modules- see part III, Annex 3) and 15 PLUP training courses in 13 provinces were implemented by the National PLUP training team. The overall objective of the training course is to build capacity among government and NGO staff so that they are able to initiate and support the PLUP at village and commune levels.

### 6. Impact monitoring

Impact monitoring is required to inform management decisions, improve accountability and to enable involved stakeholders to gain from experience. Since these concepts are new to the Cambodian government, however, impact monitoring has not yet become common. It is generally only applied in the context of externally funded projects, which are accountable to their donor agencies for any impacts caused.

Standards and procedures for monitoring watershed related variables have been developed by RGC in co-operation with various MRC-programs. In order to utilize these procedures for impact monitoring, data related to the variables should be collected and analyzed regularly and related to actions and changes occurring in the main watershed areas of the country.

Such a system of impact monitoring is currently in its early stages of development in Cambodia. If impact monitoring takes place at all, it is mainly concerned with individual projects and serves the accountability requirements of external funding agencies and related information is almost unavailable to the public. Where information from impact monitoring exercises is accessible, it can serve to form interesting case studies but is not sufficient to generate a comprehensive picture of cause-effect relationships in watershed management in Cambodia.

It is therefore necessary that the Government of Cambodia:

- Establishes and applies a standardized impact monitoring system that can be applied to WSM in the main watersheds of the country,
- Establishes comprehensive principles, criteria and indicators to monitor the performance of government activities,
- Grants access to information collected through impact monitoring.

On the part of donors and externally assisted projects it is also necessary to strengthen monitoring systems and help government agencies monitoring their own actions, thereby facilitating results-oriented decision making. This will also
improve the capacity of local organizations and increase accountability to the Cambodian public.

7. Financial mechanisms and incentives

Due to the low priority of WSM and a limited fiscal budget, RGC has no special funds earmarked for WSM and there are no clear financial mechanisms for WSM in Cambodia. Most WSM related activities carried out by line ministries depend heavily on financial support from international institutions and NGOs. These organizations mostly do not provide direct financial support to government but sponsor specific projects and programs. The Seila Program provided a model for donor-government coordination by piloting a framework for multi-donor financing of rural development and poverty reduction. The framework included technical and program support as well as direct investments in local services and infrastructure.

To date, there have been no mechanisms established for upstream-downstream compensation. Since hydropower generation plays only a minor role and downstream beneficiaries in most watersheds (rice farmers and fisher folk) live at the subsistence level, and often below the poverty line, such mechanisms may be difficult to introduce in Cambodia.

As yet, private investments in WSM related fields are limited and where they have taken place, governance problems have often lead to difficulties in enforcement of contractually agreed conditions.

The following issues should be taken care of:

- The Government should assure that priority needs of WSM are identified and that sufficient funds are provided in the budgets of the sectoral agencies and donor-assisted projects,
- To encourage domestic and foreign private sector investment in WSM related activities, a stable legal framework must be established and enforced so that investments may be secured and contracts lawfully implemented,
- The alignment and coordination among various funding sources (internal and external) in WSM related fields should be improved in an initiative allowing relevant government agencies to take the lead.
0. Introduction

Uplands and mountains cover over eighty percent of Laos. To maintain the ecological equilibrium in the uplands, human activities and interventions in natural resources management are considered necessary. Shifting cultivation is often blamed as the primary cause of erosion, forest degradation and unsustainable agriculture. There are, however, many other issues including land allocation, land use and resource depletion that should be addressed in the context of WSM in Laos.

Watershed management was introduced in Laos in the early 1980s. In the 1990s a series of laws and regulations were developed and promulgated and the first watershed management projects were launched. According to the Water and Water Resource Law (Article 10) watersheds in Laos are divided into three main types: river basins, watersheds and sub-watersheds or catchments.

Lao PDR is divided into 64 watersheds as shown in Annex I (L). Fifty-three watersheds (91% of the land area) drain into the Mekong River and the remaining eleven watersheds, situated in Xieng Khouang and Huaphan provinces, drain into rivers in Vietnam.

The watersheds or river basins range in size from the very large, e.g. Nam Ou which covers several provinces, to the very small covering only part of a district. It is therefore important to distinguish between different levels of watershed in relation to the administrative boundaries and sectors involved.

Since highland and upland watershed areas cover a large proportion of land area in Lao PDR and these again represent a considerable share of the total watershed area in the lower Mekong Basin, progress with Watershed Management in Lao PDR will contribute significantly not only to the country but also to the basin as a whole. This report is aimed at identifying required improvements by evaluating the current status of WSM in Laos.

1. Enabling Regulations

Laos has acceded to the international conventions on biodiversity, desertification and climate change and also Agenda 21 for sustainable development and environmental protection. Although the government has not yet ratified these conventions, the existing commitment has served to foster development of national policy on sustainable natural resource use and management.

In 1998, Lao PDR embarked on a process of decentralization, during the course of which the requirement for a cross-sectoral agency to lead the planning process has been fully recognized by the government. Related initiatives are currently being incorporated into government regulations and related guidelines. Two of the most recently issued regulations include the Prime Ministers Decree on The Formulation and Management of the Social and Economic Development Plan (No 135/PM 07 Aug 2002) and the Advisory note of the Prime Minister regarding
policies to define the province as the strategic unit, the district as the budget-planning unit and the village as the implementation unit (No 01/PM 11 Mar 2000). These regulations are aimed at combining and simplifying the numerous planning frameworks and procedures being implemented at various administrative levels. They re-formulate the responsibilities of the various administrative units and further stipulate that short, medium and long term socio-economic development plans must be established at the province, district, and village (cluster) levels.

Current planning approaches at the provincial level follow the planning procedures developed and introduced by the Committee for Planning and Cooperation (CPC) under the Prime Minister’s Office. Each sector will be required to prepare an annual sector plan divided into infrastructure, technical- and administrative components complemented by an operational component to guide overall planning and implementation. CPC has the mandate to oversee and coordinate sectoral planning activities although no budget has been directly allocated for planning activities so far.

Based on the national priority programs, MAF has, since 1998, produced and developed a series of sector development strategies up to the year 2020 (Vision 2020). These strategies present six programmes that are or will be implemented through specific plans, projects and activities.

These programmes included the Forestry Strategy up to the year 2020 (FS2020), developed by MAF. FS2020 is the official document guiding development of the forestry sector in accordance with national socio-economic development plans and environmental conservation measures. It is the foundation for formulation of annual and medium-term forestry related work plans of both the Government and cooperation programmes and projects.

The objectives of FS2020 are to define and agree upon a set of policy and institutional arrangements and, by common agreement, to allocate relevant roles and responsibilities among the main stakeholders to achieve sector objectives through implementation of the chosen strategies, policies and actions. More directly, the strategy provides guidelines to strengthen the management within the forestry sector. A further objective of FS2020 is to attract and focus donor support and to provide a framework for the coordination of donor activities.

Besides the regulations and programmes mentioned, there are a range of legal instruments relevant to watershed management including laws enacted by the National Assembly, decrees and orders issued by the Prime Minister, implementation regulations, orders and instructions issued by MAF and other ministries and declarations signed by provincial governors. The most relevant laws supporting integrated watershed management are detailed in the rest of this section.

Forestry Law (1996)

The Forestry Law determines principles, regulations and measures on the use, management, protection, conservation, regeneration and increase of forest, forest resources and forest land in Lao PDR. MAF is the designated ministry coordinating concerned agencies and local authorities in the survey, inventory and collection of information on forests throughout the country. These activities are for the purposes of classifying forest types, identifying and delineating forest boundaries and monitoring change in the status of forest, forest land and environment. In general, the Forestry Law also
regulates the kind of use/management applied in each forest type although detailed implementation guidelines have yet to be developed.

**Water and Water Resources Law (1996)**

The Water and Water Resources Law determines necessary principles, rules, and measures related to the administration, exploitation, use and development of water and water resources in Lao PDR. The Law (Article 10) classifies watersheds into three main types: River basins, watersheds or catchments, and sub-watersheds or sub-catchments.

The Law also defines and describes legal preconditions for the construction of medium and large-scale reservoirs for hydropower generation, and other purposes, including approval, registration and the signing of agreements. According to the law the use of water for the generation of hydropower requires appropriate feasibility studies and environmental and social impact assessments.

Chapter IV of the law covers principles for development of water sources and management of water source development activities. These principles are related to construction, installation, expansion and repair of reservoirs and other water related installations. The law specifies that these activities must proceed in accordance with socio-economic and environmental development plans, master plans and development plans.

**Land Law (1997)**

The land law includes elements related to watershed management such as erosion protection (Article 6), land allocation and tenure rights. Land is divided into use categories including agricultural land, forest land, construction, access, easement and others. Article 14 covers rights for possession, use, fruits, transfer, and inheritance of land.

Throughout the 1990s, the Department of Lands (DoLA) under the Ministry of Finance held the mandate for land titling. Land use planning and land allocation were previously the responsibility of the National Land Use Planning and Allocation Committee (NLUPA) attached to Prime Minister’s Office (PMO). In 2002, however, NLUPA was abolished and the Department of National Land Use Planning (DoNLUPAD) was established. This department is attached to the PMO and can be considered the new core cooperation partner in land-use and land management within watersheds.

Furthermore, the Lao Government recently created a National Committee on Land Policy to review and strengthen land management. This committee has been evaluating options to create a new central department or national office dealing exclusively with cadastral issues and all aspects of land management including land use planning for urban and rural areas. These moves have led to Prime Minister’s Decree No.67, *Decree of the National Land Management Agency* (No.67 / PM, 18 May 2004).

The new National Land Management Agency (NLMA) combines sections of DoLA’s mandate with those of DoNLUPAD and will incorporate DoNLUPADs recently established provincial Offices of Land Use Planning and Development under the Provincial Governors. NLMA, according to the Prime Minister’s Decree, has the function, among others, “To coordinate with concerned agencies and local
authorities in land-use planning and management, environment protection, land
development and controlling land use for all categories of land’. NLMA also has
the right ‘To issue regulations, notifications, orders, decisions and instructions
relating to land management and administration for the whole country’. This new
agency could in the future be considered as the core cooperation partner in land
use and land management issues.

**Conclusion**

A legal framework governing resource management has been set in place but to
begin implementation, many details related to guidelines and regulations need to
be developed and disseminated to different levels of government.

At present, there is no clear regulation or order ruling whether MAF or CPC will be
the key agency responsible for developing a WSM plan and guiding
implementation. Furthermore, any WSM plan developed will require legal support
and approval before enactment and enforcement by concerned agencies.

**2. Institutional framework**

The principal government agencies dealing with watershed management are the
Prime Minister’s Office (PMO) and various line ministries. The agencies under the
PMO include the Committee for Planning and Cooperation (CPC), the Science
Technology and Environment Agency (STEA) and the Water Resource
Coordinating Committee (WRCC). Ministries involved in WSM outside the PMO include the Ministry of Agriculture and Forestry (MAF), the Ministry of Industry
and Handicraft (MIH), the Ministry of Finance (MOF), the Ministry of Public Health,
the Ministry of Communication, Transport, Post and Construction (MCTPC), and
the Ministry of Education (MOE).

Following instruction by the Prime Minister and the long-term sector strategy,
watershed management is seen as sector coordination rather than an integrated
sector plan. In reality, however, at the central level a sectoral planning approach
is still applied in natural resource management. Each sector – agriculture,
forestry, fisheries and mining – develops and follows its own WSM approaches.

MAF has issued guidelines for land and forest land allocation that are closely
linked to watershed management activities, e.g. land use classification and
protection of water resources. Mechanisms and procedures to incorporate the
integrated watershed management approach into national planning frameworks
still, however, need to be developed. This activity is under the mandate of the
Committee for Planning and Cooperation (CPC), the key government agency for
integrating sector plans into the national socio-economic development plans,
which include long-term strategies, five year socio-economic development plans
and annual plans.

At the central level, MAF plays the leading role in organizing, coordinating,
preparing and implementing watershed management plans. STEA, as a key
stakeholder and coordinator, is also involved in management plan preparation.
STEA’s focus, however, is normally on environmental impact assessment and
monitoring.

The CPC and its line departments at the provincial and district levels are
mandated to integrate the development plan before submission to the national
assembly. Based on this framework provided by the development plan, all provinces should develop overall strategies and priorities for sub-watersheds located within the province. Correspondingly, districts should develop watershed plans either alone or together with neighboring districts depending on the location of watershed boundaries. By 2010, the aim is that district and provincial level integrated watershed management plans should have been developed for the entire country. Within the present five-year plan (2001-2005) focus is on developing watershed plans in the eight Northern provinces, where, owing to the importance of the water resources and high incidences of shifting cultivation and poverty, the country’s priority watersheds are located. So far, however, WSM plans have only been drafted for few provinces and districts.

Watershed management projects have always been set up in parallel to existing government institutions at provincial and district levels and as such are not normally well coordinated and integrated with local structures.

Experience to integrate WSM-related activities into other province and district level development activities during the Nam Ngum Watershed Conservation Project (NAWACOP) suggested that integration would be unsuccessful where development priorities were not matching. At provincial level, however, there is no effective organizational mechanism allowing integration of project budgets, work plans, concepts and approaches into relevant development activities carried out by government departments and/or projects supported by other donor agencies.

Overall, two main problems can be identified with the institutional framework in relation to WSM in Laos:

1. The poor definition and lack of integration of roles and responsibilities between official institutions from various sectors and administrative levels, especially MAF and CPC.
2. The parallel, un-integrated structures for implementing government and donor activities at the national, as well as the regional/provincial, level.

### 3. Consistencies in Planning Processes

Supra-national level planning capacity is centered in the MRC, where efforts are focused on establishing a Mekong River basin development plan using information and development plans of the Mekong countries and especially those of the lower basin. This, however, remains a work in progress, and, as such, guidelines and details of the development plan have yet to be produced.

Since national planning guidelines for integrated watershed management have yet to be institutionalized, most watershed planning in Laos takes place under projects funded by bilateral donors or international development agencies. One integrated watershed management planning approach formulated by the MAF/DANIDA National Capacity Building Project (NCBP) is illustrated in Annex 3 (L). At the project level, the Nam Ngum Watershed Management Plan also developed its planning framework using procedures similar to those used by the NCBP (Annex 4 (L)).

At present, there are two well known watershed management plans ready for implementation. Nam Ngum Watershed, supported by ADB and Nam Theun 2, supported by several investment groups. The Nam Ngum watershed management plan is at an operational planning stage although it is foreseen that some activities will be carried out on the basis of an earlier plan. Following the initial planning exercise almost 10 years ago, management of the Nam Theun 2
watershed has been integrated with the Nakai-Nam Theun National Biodiversity Conservation Plan. The major driving force behind the establishment of both plans has been the existence or planned construction of large hydropower schemes in the respective watersheds. As budget allocation in these cases depends on the government budget, plan implementation is the responsibility of the concerned sector.

It has been observed that the targets and goals of these plans faithfully reflect government development policies and are in accord with local community needs, as the planning process included active participation of both local communities and authorities. Observers claim, however, that greater efforts are required to mitigate the effects of resettlement resulting from planned flooding of the Nam Theun area. As far as sectoral coordination and collaboration is concerned, integrated natural resource and watershed management planning and implementation are the responsibility of MAF. Other key technical ministries, including the Science, Technology and Environment Agency, Ministry of Industry and Handicraft and others, focus primarily on activities within individual sectors. Questions may, however, be raised as to whether it is appropriate for a sectoral ministry, itself, to promote coordination and collaboration between sectors.

The CPC and its line agencies at provincial and district levels currently use a regional approach for the development of socio-economic development plans, while MAF promotes an area-based resource management approach. These dissimilar approaches result in some degree of friction and lack of harmony, which leads to planning inconsistencies. In the next few years a key challenge will be to integrate regional development plans and watershed management plans at both the provincial and district levels.

4. Implementation experiences

Donor agencies involved and active in implementing watershed management include the Asian Development Bank, the EU, DANIDA, the German government and JICA.

Experience from the Nam Ngum Watershed Conservation Project (NAWACOP) indicated that, in comparison with government-driven rural development projects, technical support with only limited financial backing for implementation can lead to a lack of acceptance of project work by local people. For example, whilst IFAD were able to invest in infrastructure development, NAWACOP could not. In addition, NAWACOP demonstrated that the existence of parallel structures in project and government agencies led to constraints in planning, implementation and monitoring activities in watershed development. It also created competition between project and government staff, the former having been considered to have had access to better facilities and higher salaries.

Experience from the Nam Ngum Integrated Watershed Management Project (NIWMAP, DANIDA 2000-2002) showed that where project structures are integrated into existing provincial and district administrative structures, and a limited number of target villages are selected, successful outcomes are more likely. Although the project was terminated after the first phase, local villages and district authorities have continued to administer credit schemes and a revolving fund for livestock, amongst other activities introduced to target villages by the project. In summary, integration of the project into existing local structures with capacity building and technical support from the central level (MAF) appears to have improved the sustainability of project activities.
With respect to participatory sustainable forest management, the first initiative adopted in Laos began in 1994. The most notable models were developed under FOMACOP (Village Forestry) and the Lao-Swedish Forestry Programme (LSFP), which implemented two models of Joint Forest Management (JFM). Independent evaluation of these initiatives has recognized that community participation in forest management can successfully achieve sustainability, improved conservation and accelerated village development. JFM models contributed valuable experiences in village participation in SFM and demonstrated the ability of villagers and government line agencies to manage natural forests in partnership. JFM Model 1 provided benefited villagers to a greater extent, especially with respect to capital for village development. This resulted in greater motivation and reduction of poverty and also led to better forest protection. In summary, it has been shown that participatory management of natural forests can sustain ecosystem function, contribute to biodiversity conservation and generate significant revenues for village development and poverty reduction. These facts have been verified through an independent pre-certification assessment conducted by SGS.

The Forest Conservation and Afforestation Project (FORCAP) supported by JICA was initiated in 1998 and pursued the overall goal of reducing further forest degradation in the upper Nam Ngum Watershed, purportedly caused by shifting cultivation. Activities focused on capacity building for government staff at the district level and in local communities as well as the promotion of forest conservation and income-generating activities aimed at improve living conditions. Village-based resource planning, including Participatory Land Use Planning (PLUP), was a precondition to establishment of plantations containing exotic and indigenous tree species by farmers on their own land. Farmers were handed full ownership of the plantations and exempted from payment of land taxes. A benefit sharing system has also been introduced to promote reforestation of highly degraded forestland. Under the system, district authorities provide seedlings, materials and extension services in return for 25% of the benefits from plantations; farmers retain the initial 75%. The system provides additional income for farm families and provides district government with funding for future support.

The Land Use Planning and Land Allocation (LUP/LA) programme is used as a tool by the Lao Government to enforce policy issues including eradication or stabilization of shifting cultivation, elimination of poppy cultivation and settlement relocation and village consolidation. Other objectives include promotion of decentralized and community-based natural resource management, increasing investment in land and generally improving living conditions. Village level land use planning and land allocation began in Lao PDR approximately 10 years ago and is the only country in the sub-region with a national programme of this particular type. Unfortunately, although the programme started with good intentions, it has had numerous negative effects on the livelihood of rural populations and has come under serious criticism for reducing agricultural production areas and fallow periods reduction has in some cases resulted in increased poverty and worsened living and working conditions. For example, villagers may open new plots of land outside of allocated areas, land delineation may create numerous restrictions and old customs and traditions may be disrupted. The LUP/LA programme therefore needs to undergo fundamental changes including: simplification as far as is possible; restructuring so that LUP/LA activities are expanded in clusters and conducted in phases over longer periods of time. LUP/LA should also be adapted to suit the specific situation of remote ethnic minority villages, acknowledging the significant differences that exist with lowland paddy based villages.
5. Capacity building

Capacity building in watershed management is normally conducted through both short- and long-term training and research and extension. In Lao PDR considerable effort is focused on improving staff competence and skill in integrated planning.

Training for WSM planning aims to improve the skills of technical staff at central, provincial and district levels. To improve the effectiveness of training, more staff with appropriate facilitation skills are required. In addition, staff involved in WSM planning processes are frequently required to change their positions and responsibilities, leading to a high rates of staff turnover. Furthermore, those attending courses are frequently not those for whom training was intended and the majority of staff sent are generally not involved in planning and decision-making.

Human resource development in WSM has so far focused on educating technical staff in MAF, STEA and CPC at the central, provincial and district levels. To provide basic knowledge of WSM and NRM concepts, the more important issues should, however, also be integrated into the training curricula of other sectors and agencies including LWU, transport and communication, health, primary and secondary schools, related government agencies and NGOs.

Research is currently centered in two national research and higher education institutions, the National Agriculture and Forestry Research Institute (NAFRI), and the National University of Laos (NUOL). NAFRI was established in the mid 1990s with the aim of supporting the development of the agriculture and forestry sectors. Since then efforts have been made to promote sustainable upland agriculture including catchment and area based development approaches.

MAF in collaboration with NUOL, DANIDA and DSE Germany (now called InWEnt) has jointly organized a number of training courses in watershed management and planning. The most recent course in March 2004 was conducted in the local language by local resource persons and supported by InWEnt Germany.

The Faculty of Forestry at NUOL has included a course on integrated watershed management as part of its B.Sc. curriculum. The course manual is based on international, regional and national experience in watershed management. Target groups include undergraduate students and vocational students enrolled in the faculty. Watershed management documents and training materials are available in English and, in some cases, Lao.

The National Agriculture and Forestry Extension Service, established by MAF, has the same administrative power as other departments within the Ministry. Much of the extension work so far has dealt with promoting rice production and supplying seed and agricultural inputs, including machinery, to improve productivity. At the same time, NAFES is defining its position in collaborating with the research agencies under the MAF umbrella. Experience from the MAF-DANIDA capacity building project has shown that successful capacity building should focus not only on training of central and local staff, but also on creating a productive working environment amongst involved staff after training has been completed.
6. Impact monitoring

Watershed management impacts may be monitored using biophysical and economic indicators. Monitoring water quantity and quality can indicate the impact, and aid understanding, of human activity on the water resources in terms of biological, physical and chemical components. To improve regional and national data gathering, an upgrade of the predominantly MRC funded Mekong river network of hydrological measurement stations is currently being reviewed.

To provide reliable and appropriate monitoring of watersheds and the impacts of human activities, natural resource databases need to be established and extended. The center for information and statistics on natural resource management, established by MAF, is currently in the process of setting up and upgrading its hardware and software facilities. In the meantime, the center is collecting relevant information on agriculture and forestry from concerned agencies and providing data to users upon request. Ultimately, information will be used to improve impact monitoring in relation to watershed management.

In general, monitoring, and especially impact monitoring, systems have yet to be applied across all projects implemented in Laos. This is primarily because the majority of WSM projects are just beginning to develop operation plans. However, existing watershed management plans already contain a monitoring framework through indicating aspects of the projects to be monitored. Due to the small number of projects that have been implemented to date, conclusions concerning the nature and especially the outcome of impact monitoring in WSM in Laos cannot yet be drawn. Standardization of indicators, methods and criteria is, however, often proposed.

7. Financial mechanisms and incentives

National Policies indicate the significance of natural resource management and, in particular, integrated watershed management. As a result of the state budget deficiency, however, the Government has not yet allocated budget specifically for watershed management planning and implementation. WSM projects that have been, or are being, implemented in the country are mainly funded through overseas development assistance.

Although several laws (see Annex VI (L)) state that the Government will support the establishment of a protection/development fund and of beneficiaries are mandated to contribute to management funds, such a fund has yet to be set up.

ADB TA 2734-LAO, Nam Ngum Watershed Management Planning Project proposed establishing a Watershed Management Fund by collecting a 1-2% percentage of hydropower royalties to direct the benefits of resource use back to the residents of areas from which they are tapped. So far, however, no watershed management fund has been set up under this project.

The Nam Theun-Hinboun Hydropower Project is a private company, which allocated funds to improve the livelihoods of people resettled as a result of the project. However, no information is available concerning the scale and length of project support and the extent to which resettled people have benefited from this type of upstream-downstream transfer scheme.
To allow more runoff to drain into the Xeset river and therefore increase power generation, Electricity Du Laos (EDL) has supported construction of water supply systems for villages in the upstream areas of the Xeset watershed.

In the case of the Nam Theun 2 dam, the catchment management plan has been prepared in parallel with the management plan for the National Biodiversity Conservation Area. The project agreement aimed to ensure that the resources and environment associated with the catchment are not destroyed. To achieve this aim, allocation has been made to a conservation fund covering implementation of natural resource conservation and livelihood development activities. According to the agreement, US$ 1 million per year will be allocated to support protected area management, land allocation and livelihood development for conservation in the upper watershed where water resources originate. The first agreement has committed finances for a period of 25 years.
0. Introduction

Recent years have brought new evidence of a burgeoning water crisis in Thailand and neighboring countries. The reservoirs feeding Thailand’s irrigated rice basin, the Chao Phraya, dropped to record lows and led to unprecedented cuts in water supply to Bangkok. Cycles of flash floods and droughts also emerged as the most serious threat to Vietnam’s growing agricultural economy and recent flooding in the North and Northeast of Thailand served as a potent reminder of the high cost of inadequate watershed management.

Crises in water supply and local welfare are symptoms of an underlying trend of increased competition over the natural resources essential to the livelihoods of upland and lowland residents alike, namely land, water and forest. In Thailand, much of the forest land have been converted to agricultural during the past decades and forest cover has fallen from 60 percent of total land area in 1960 to 25 percent at present. Research indicates a general trend of cultivated land expanding into fragile and steep-sloping areas but the effects of this trend are more complex than commonly assumed. The current mosaic of agriculture, forest and other land-uses across the landscape has affected watershed function in ways not apparent at the plot level (ICRAF, 1999).

Research has also revealed that deforestation and inappropriate land-use has significantly affected water quantity and quality, leading to distributional conflicts between the agricultural and industrial sectors and impacting upon domestic water supply. In addition to regulation of water flow and water quality for human use, ecosystem services associated with upper watersheds include maintenance of the health of downstream fisheries and wetland ecosystems and the direct contribution of biodiversity to agricultural productivity and local livelihoods. A better understanding of the impacts of alternative forms of upland resource management on ecosystem services is needed so that policies providing the broadest social benefit and reducing conflict among dependent groups may be formulated (ICRAF, 1998).

WSM has a long history in Thailand (see Annex I) and, following reforestation measures in 1953, many WSM approaches and activities in related sectors have been applied. This report investigates recent developments and activities in order to draw a comprehensive picture of the status of WSM in Thailand.

1. Enabling Regulations


In an effort to translate these conventions into national policy, national bodies have been appointed. For example, the Office of National Resources and Environmental Policy and Planning (ONEP) was appointed as the national focal point and designated to serve as the National Biodiversity Reference Unit (NBRU).
to the ASEAN Regional Center for Biodiversity Conservation (ARCBC). The major outcomes of this body include:


Policy regulations relating to WSM can be traced back to the 1950s. Since then, WSM related issues, especially land use/land reform and forest conservation/rehabilitation have been subject to continuous political attention. In the most recent five-year plans, water quality and water resources management have received increasing attention.

While the 8th NESDP (1997-2001) focused on ecological rehabilitation (reforestation, soil and water conservation, natural disaster prevention) the 9th NESDP (2002-2006) shifted towards emphasis on policy and institutional measures, such as decentralization, law enforcement and supervision (Annex 1).

The legal background to watershed management in Thailand can be traced to 1975 when the land-use planning law for people’s resettlement (Urban Plan Act B.E. 2518, 1975) was approved by Parliament. The Land Development Act (B.E.2526), a land-use planning law for agricultural production, was promulgated in 1983 to improve and rehabilitate areas of the country suitable for agriculture. With respect to the environment, the Wildlife Act of 1960 (2503), the National Park Act (B.E. 2504) of 1961 and the National Forest Land Act (B.E. 2507) of 1964 benefited both ecological and environment conservation. An overview of official policy documents and laws related to WSM is given in the following table.

**Table 1: Legal and policy documents related to WSM in Thailand**

- Land Act B.E. 2497 (1954)
- Regulation under the National Committee on Land Management Regulation No.6
- National Forest Reserve Act (1964)
- Wildlife Act 2503 (1960),
- National Park Act (1961)
- Agricultural Land Consolidation Act (1974)
- Urban Plan Act B.E. 2518 (1975)
- Agricultural Land Reform Act (1975)
- Land Development Act B.E.2526 (1983)
- Cabinet Resolution on watershed Classification (1985)
- Cabinet Resolution on Highland Community and Environmental Development and Narcotic Abuse Control (1992)
- Tambon Administration Act (1992)
- Forest Policy (1995)
- Thai Constitution (1997)
- Cabinet Resolution on Settlement and Farming in Protected Areas (1998)
- Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997-2016)
- Cabinet Resolution on land-use and land-use conflict resolution (2003)
Two policies aimed at solving socio-economic and environmental problems in watershed - particularly in upland and highland areas - are (i) the Cabinet Resolution on Watershed Classification, and (ii) the Cabinet Resolution on Highland Communities, Environmental Development and Narcotic Abuse Control. The first resolution defined five classes within watershed areas, whereby the first refers to protected headwater sources, the second to commercial forested areas and the third to fifth denote areas used for agricultural purposes. The second cabinet resolution aimed to control the expansion of opium growing areas and to group tribal villages together at suitable sites. These laws and regulations reflect the long-standing commitment of the Thai Government to conserving watershed resources and controlling narcotics.

Thailand’s first framework environmental legislation (The Enhancement and Conservation of National Environmental Quality Act, NEQA) was promulgated in 1992 and resulted in the establishment of the Ministry of Science, Technology and Environment (MOSTE). The Act requires that projects of all sizes proposed in Watershed Class 1B undergo mandatory environmental impact assessment (Wardell, 1997). Further Cabinet Resolutions, which have influenced watershed management activities in Thailand include:

- Cabinet Resolution concerning the classification of land and forest use within the National Forest Reserve (1992);
- Cabinet Resolution concerning a master plan for community and environmental development and narcotic plant growth control in the highlands (1992);
- Cabinet Resolution concerning the Permanent Reforestation Campaign (1994).

The most recent Cabinet Resolution concerning WSM was issued in 2003 and provides guidelines for land reform and resolution of land-use conflicts. The resolution offered local communities the opportunity to set up agreements and rules concerning land-use according to land capability/suitability. To maximize land-use benefits seven master plans have been enunciated:

1) Land Taxation Reform Plan;
2) Land Management Organization Reform Plan;
3) Land Database Development Plan;
4) Land and Soil Conservation/Rehabilitation and Utilization Plan;
5) Land use Classification Plan;
6) Agricultural Land Control Plan;
7) Land Ownership Reform Plan.

2. Institutional Framework

Several sectoral and non-sectoral line ministries are involved in watershed management activities. They concentrate mainly on the formulation of sectoral policies and strategies and implementation of action plans. Cross-sectoral coordination remains limited at both central and local (provincial) government levels. Currently, more than 30 government departments are active in watershed related activities as shown in Table 2.

1 E.g. the Watershed Conservation Section under the Office of Natural Resources Conservation, Department of National Park, Wildlife and Plants
Table 2: Government institutions involved in watershed management in Thailand

<table>
<thead>
<tr>
<th>Key Actors at the Central Government Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ministry of Interior (MOINT)</td>
</tr>
<tr>
<td>- Office of Permanent Secretary (OPS.I)</td>
</tr>
<tr>
<td>- Office of Policy and Planning (OPP)</td>
</tr>
<tr>
<td>- Natural Resources and Environmental Policy Division (supported by CIDA)</td>
</tr>
<tr>
<td>- Town and Country Planning Department (TCPD) (supported by GTZ)</td>
</tr>
<tr>
<td>- Department of Local Administration (DPS.A)</td>
</tr>
<tr>
<td>• Ministry of Agriculture and Co-operatives (MOAC)</td>
</tr>
<tr>
<td>- Office of Permanent Secretary (OPS.A)</td>
</tr>
<tr>
<td>- Foreign Agricultural Relations Division</td>
</tr>
<tr>
<td>- Office of Provincial Agricultural and Co-operatives</td>
</tr>
<tr>
<td>- Office of Agricultural Economics (OAE)</td>
</tr>
<tr>
<td>- Natural Resources and Environmental Policy and Co-ordination Center.</td>
</tr>
<tr>
<td>- Royal Forest Department (RFD) presently, almost all activities related to WSM transferred to Department of National Parks, Wildlife and Plants (NPWP) under the newly established Ministry of Natural Resources and Environment)</td>
</tr>
<tr>
<td>- Royal Irrigation Department (RID)</td>
</tr>
<tr>
<td>- Land Development Department (LDD)</td>
</tr>
<tr>
<td>• Ministry of Science, Technology and Environment (MOSTE) (presently separated into 2 Ministries, the Ministry of Science, Technology and Energy, and the Ministry of Natural Resources and Environment)</td>
</tr>
<tr>
<td>• Ministry of Natural Resources and Environment (MONE)</td>
</tr>
<tr>
<td>- Office of the Permanent Secretary</td>
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<tr>
<td>- Office of Natural Resources and Environmental Policy (ONEP)</td>
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<tr>
<td>- Office of Environmental Policy and Planning (OEP)</td>
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<tr>
<td>- Department of National Parks, Wildlife and Plants (DNP)</td>
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<tr>
<td>- Department of Water Resources (DWR)</td>
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<tr>
<td>- Department of Mineral Resources</td>
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<tr>
<td>- Department of Environmental Quality Promotion</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Actors at the Local Government Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provincial Administration headed by the Governor (recently called Provincial CEO) through the Office of Provincial Administration (OPA) under MOINT</td>
</tr>
<tr>
<td>• Provincial Watershed Management Centers (PWMC) (NPD/MONE)</td>
</tr>
<tr>
<td>• Amphoe (District) Administration (under MOINT)</td>
</tr>
<tr>
<td>• Local Administration (Elected Officials) recently called “Tambon Administrative Organization, TAO” (important for community participation in local planning)</td>
</tr>
<tr>
<td>• Watershed Rehabilitation Management Units (NDP/MONE)</td>
</tr>
<tr>
<td>• Village Watershed Network Organization (Local Committees)</td>
</tr>
</tbody>
</table>

To avoid conflicts caused by overlapping responsibilities due to the considerable number of actors, the Department of Water Resources (DWR) has recently established the Watershed Administrative Organization (WAO), which combines divisions that formerly competed for influence in WSM planning. This task force will assist resolution of water resource problems by adopting watersheds as the unit for participatory planning and implementation. In the same manner, the Watershed Administrative Committee (WAC) has been established to form policies and coordinate plans for water resource management covering issues including utilization, conservation and allocation of water, prevention and alleviation of floods and droughts and reduction of pollution.
The WAC comprises members selected from different sources: government officials, state enterprise representatives, representatives of local organizations and water users’ organization, stakeholders who work or live in the concerned river basins and qualified persons with knowledge and experience relating to water resource management. The number and composition of the WAS depends on the local situation in each river basin although the chairman and secretary of the sub-committee are appointed from the sub-committee of the concerned river basin.

### 3. Consistencies in Planning Processes

**Past Planning Processes**

Watershed management planning officially began in 1975, when the Ministry of Agriculture and Cooperation (MOAC) proposed to the cabinet that the Mae Ping watershed should be classified according to three classes: head watershed, commercial forest and agricultural area. Due to significant mining operations in the proposed class 1 watershed areas, the Ministry of Industry requested a revision to the watershed classification. A new committee, funded by the NESDB and IUCN, was therefore formed in October 1979. A new scheme of watershed classification comprising five watershed zones was submitted by the committee for cabinet approval in 1985 and, in 1991, was applied throughout the country.

Complementing the watershed classification system, the National Watershed Management Plan was prepared in 1992 by the RFD with FINNIDA and UNDP assistance as part of the Thai Forestry Sector Master Plan (Tangtham, 1992). The plan was subsequently amended to reflect changes to NESDB’s 8th Five Year Plan, which, in contrast to previous plans, placed considerably emphasis on community participation (Tangtham, 1996b). Although the amended Thai Forestry Sector Master Plan was officially endorsed and approved by the RTG, there has been no follow-up by RFD or RTG.

In parallel with the formulation of the Thai Forestry Master Plan, studies on participatory watershed and land-use planning have been conducted by various groups (e.g., Piyarom and Backhaus, 1990; Poffenberger and McGean, 1993; Ganjanapan, 1995; Jantakad and Carson, 1998). The study “Community Allies: Forest Co-Management in Thailand” (Poffenberger and McGean, 1993) compared two different systems of community forest management, “Dong Yai” in the Northeast and “Nam Sa” in the North. In both cases, rural communities, together with the RFD, broke new ground by working together with communities to regulate access and regenerate degraded natural forests. The Dong Yai case illustrated several points, including the increasing threat to the resource as its value accumulated, the strong forest dependency of the Dong Yai communities, especially on non-timber forest products, and the villagers’ considerable motivation in ensuring forest benefits were sustained. The support and leadership provided by the Tambon Council, RFD’s regional forestry office and concerned researchers created a climate in which villagers were empowered to organize a local forest protection committee and establish their own rules and responsibilities.

**Planning Processes in continuing Projects**

With respect to long-term watershed management schemes, in 1996 the cabinet approved a twenty-year planning period (1997-2016) for the Policy and Prospective Plan for Enhancement and Conservation of Natural Environmental Quality. The plan will serve to guide policy for all concerned government agencies and state enterprises and comprises six main policy areas: Natural Resources,
Pollution Prevention, Natural and Cultural Environment, Community Environment, Environmental Education and Promotion and Environmental Technology.

In 2003, river basin plans were formulated by the DWR and the concept of integrated water resources management using a participatory approach has since been applied in 25 of Thailand’s main basins.

The Master Plans in water resource development concentrate on linking upstream resources to downstream reservoirs to secure irrigation and domestic consumption. The plans prioritize numbers and locations of reservoirs and their storage capacities rather than considering related natural resources such as forests, soils and wildlife. In the recently published "Thailand: Country Environmental Policy Integration Analysis Report" it was proposed that planning activities should be prioritized according to the estimated extent of direct and indirect benefits (including social and environmental benefits), the urgency with which steps need to be taken and how achievable the steps are. The report proposes the following measures: (1) Adoption of regional planning based on major river basins for water and land resources; (2) Integrated economic and environmental planning at the sub-national level; (3) Strengthening protection of parks and protected areas; and (4) Cleaner production for the industrial sector.

4. Implementation Experiences

Experiences from RFD Projects before 1996

Regarding organization and management in watershed management projects, three models have been tried in Thailand: (1) single agency implementation, (2) combined agency implementation and, (3) single agency implementation with line agencies.

The first model was employed in Mae Sa watershed Management Project in Northern Thailand in 1972. RFD staff implemented all activities with the assistance of UNDP/FAO. Although this project was a good example of integrated land-use management aimed at improving socio-economic and environmental conditions, a lack of cooperation within the RFD and among high-level officers in both the ministry and at local levels resulted in poor project performance. In other areas, this model of implementation has been used for mini-watershed development projects and related highland rural development by the PWD, and ONCB.

The experience of the Mae Sa Project led the RTG to support combined agency implementation for a new pilot watershed management project in the Mae Chaem Watershed. From an administration point of view, combined agency implementation allows coordination among line agencies and improved field implementation. The degree of success in implementation, however, mainly depends on the capability or personal ability of the project chairman (in this case the Provincial Governor) and his administrative team rather than the system itself. Furthermore, considerable funding is needed for multi-agency project implementation and, for these reasons, combined agency models of implementation may not be applicable to other projects or areas.

The third model, single agency implementation with line agencies, has recently been operating in the Mae Lai Participatory Irrigation Project in Phrea Province.

Sam Mun and the Wieng Pha Highland Development Project in Chiang Mai and Chiang Rai Provinces. The first is rather a bi-agency implementation project, i.e. the RFD is involved in implementing upland watershed rehabilitation while the RID is involved in downstream reservoir and irrigated area development. The main responsibility for implementing watershed management activities lies with RFD, but the RID acts as budget managing agency.

**Lessons Learned from Nam Sa Northern Sub-Watershed**

In the northern sub-watershed of Nam Sa, conflict between midland and upland tribes related to unsustainable land-use practices were leading to rapid forest and environmental deterioration. An incremental strategy to reduce social conflict through “micro-watershed land committees” and “networking resident community groups” was established and organized through a coordinating forum. Ecological information and tools such as 3D models and maps improved villagers’ understanding of the importance of upstream-downstream linkages in their watershed area. With technical assistance from the RFD and in cooperation with the midland Karen people, Hmong and Lisu tribes began to abandon shifting cultivation on steep slopes and to practice upland forest protection and lowland irrigated paddy cultivation. Decentralized control of defined micro-watershed areas by organized local hamlets has reduced threats of fire, illegal logging and upland erosion and has also resulted in impressive natural forest regeneration.

**Lessons Learned from the Upper Nan Watershed Management Project**

The most recent lessons learned in watershed management in Thailand are from the Upper Nan Watershed Management Project, implemented between 1996 and 2003. The strategy employed by this project consisted of: (1) identifying best practices for a number of activities and expected direct outputs (planning together), (2) providing a Village Development Fund (VDF) as an incentives for villagers to participate in planning and implementation, (3) utilization of GIS, GPS and 3-D modeling as tools for integrated planning and monitoring, and (4) establishing Village Watershed Networks to understand upstream-downstream impact relationships in relation to management and to facilitate conflict resolution. Lessons learned from this project may be summarized as follows:

- Communities will manage watershed resources sustainably if they perceive it to be improving their livelihoods;
- Villagers must be considered part of the solution rather than part of the problem;
- In training villagers in sustainable natural resources management, support from the TAO, village watershed networks and district government officers are important for success;
- Working and planning in participation with villagers cannot be an add-on, it must be embedded in the planning process from the beginning, and there has to be sufficient manpower and financial support. Funds needed to achieve significant results through information, consultation and active participation are, however, usually small in comparison with the total amount spent on a given policy for watershed management and protection;
- Active participation of villagers ensures more effective implementation as villagers become informed and provide useful feedback;
- The combination of GPS fieldwork, GIS application and 3-D modeling for participatory planning has worked well.
Lessons Learned from NGO Integrated Watershed Management Project

Another recently implemented project, “Integrated Watershed Management through People’s Participation in Upper Yom” was proposed by the Coordination Center for Natural Resources and Environmental Management (CNEM), an NGO based in Chiang Mai. The project objectives were to improve water quantity and water quality, to reduce soil erosion in the Mae Yom watershed and to protect and rehabilitate the upper watershed through participatory approaches.

To achieve these objectives the project included the following measures:

• Stakeholder consultations;
• Integration of water and environmental management in local educational curricula;
• Seminars on solid waste management;
• Spiritual ceremonies as a way to gather local water users and discuss water related issues,
• Upstream-downstream stakeholder information exchange and consultation,
• Study Tours,
• Reforestation activities,
• Training on land-use planning,
• Establishment of conservation and buffer zone areas for recreational activities.

The main findings can be summarized as follows:

• The network of irrigators associations developed by the project across districts have provided an opportunity for farmers and stakeholders to realize the commonalities of their concerns. Moreover, farmers and settlers located in the lower watershed were able to directly communicate their concerns to those operating upstream.

• The project has facilitated development of water-use and environmental plans through continuous consultation and active coordination. In the past, farmers had to wait for over three years and in some cases, more than a decade, for official responses to their concerns. The project has empowered local farmers and irrigators associations to discuss water and environmental issues among themselves and, more importantly, with local government administrators and district officers. Both sides have realized that open communication could help in devising strategies for more effective water management. However, there remains a tendency for local administrators to try to control the farmers by requiring official administrative approval before the farmers develops and implements a work plan.

• Water management technologies would be more highly appreciated and more effective if linked directly with livelihood and income generating opportunities.

• The establishment of basin committees provided local farmers and other stakeholder’s necessary representation in government decision-making processes. Current government regulations allow basin committees to design programs and define budgets and for local stakeholders to prioritize decisions and projects according to local conditions and needs. However, there remains a need to further increase stakeholder representation in government planning and decision-making processes.

• Cultural beliefs and practices, including spirit ceremonies, were crucial in bringing people together, catalyzing project initiatives and influencing
behavior, particularly with respect to resource utilization. Such beliefs and practices should be further promoted rather than neglected and forgotten.

- Stakeholder consultations conducted by the project highlighted the need to clarify, define and institute water-use rights to enable more effective water management. For example, water users’ associations impose varying charges for irrigation water, with new users paying slightly higher fees than older members.

5. Capacity building

Research

Historically, technical issues including silviculture, entomology and forest hydrology, etc. have been emphasized in national forestry research programmes. Three key areas of importance to watershed management merit particular attention for support in future forest research programmes under UNDP’s Watershed Conservation and Management Office (WCMO) and Watershed Research Group (WRG) as follows:

- Socio-economic and legal issues, notably in collaboration with the Department of Sociology and Anthropology, Chiang Mai University (CMU), the Center for Applied Economic Research, Kasetsart University and the Faculty of Law, Thammasat University (e.g. the changing role of non-timber forest products in rural hill-tribe economies, customary laws and institutions for the management of land and water resources and the opportunity costs of labor in diversified rural economies);

- The hydrological and micro-meteorological effects of land-use changes in upper watersheds, notably in collaboration with the WRG of DNP and the Department of Conservation in the Faculty of Forestry, Kasetsart University.

- Environmental and economic assessments of forest management options in upper watershed forests, notably in collaboration with the Forest Management and Economic Research Division of the DNP, Kasetsart University (encompassing market pricing, effects on (downstream) production, surrogate travel costs, damage avoidance costs and contingent valuation methods).

Training and Extension

Training and extension are limited in scale to field target areas. Various approaches, such as participatory land-use planning, watershed networking and people’s fora have been applied to generate community awareness of sustainable watershed management. A manual for the chief of the watershed management unit, WCMO, has also been compiled to guide participatory development approaches.

The draft Watershed Management Master Plan (Tangtham, 1992b) estimated that the current 158 watershed management units with 289 staff will, in the next 20 years, need to be increased to 258 units, with 1,290 staff conversant with community-based planning methodologies and extension strategies (Tangtham, 1966b). This will require an extensive programme of training, and particularly “training of trainers”, in order to increase participation in large-scale watershed management.
6. Impact monitoring

Results of impact monitoring conducted by the Office of Natural Resources and Environmental Policy (ONEP) for the period 2002-2003 can be summarized as follows:

- Environmental Pool: This is a useful method to improve understanding of public opinion that can be adopted to enable necessary adjustment of public services.

- Toxic Substances and Hazardous Waste: During the past decade quantities of hazardous waste have increased from 0.9 million tons in 1993 to 1.78 million tons in 2002. About 75 percent of the waste is created by the industrial sector.

- Agricultural Land and Soil Erosion: Soil erosion covers an area of 100 million rai (16 million hectares). The most severe areas of erosion are in the northern region. Soil erosion leads to various problems including nutrient leaching, soil quality degradation, sedimentation and release of toxic substances, which may be carried downstream with the suspended sediment.

- Forest Resources: In 2002, forest reserve and recreation areas totaled around 57.78 million rai (9.2 million hectare) or 18 percent of the total land area. After logging concessions were banned in 1989, the annual deforestation rate declined from 2.9 million rai to 1 million rai per year.

- Land Resources and Land Use: Unsuitable land use prevails in in a considerable part of the country, mostly in the northern highlands. In 1998, 56.2 percent or 174.9 million rai (27.9 million ha) were used for agriculture, but in 2000/2001 the area rose to 180.3 million rai (28.85 million ha), an annual increase of 2.7 million rai (0.43 million ha). Much of this is likely to have been from conversion of forested areas.

- Water Resources: In 2002, 62 provinces were reported to have encountered water shortages. The problem affected 1.3 million households and around 5.7 million people. In the same year, there were 12 floods reported during the rainy season.

The impacts of agricultural expansion have included deforestation, unsuitable cultivation of hillsides and vast over-exploitation of other resources. Deforestation has had a cumulative effect on the cycle of floods and droughts. Floods take place in most years and, in recent times, the most serious floods took place in 1993, killing 47 people and affecting almost one million others. Property losses were estimated at US$ 86.2 million. Wide spread flooding also occurred in 1995. Although around 1.5 million hectares of farmland were flooded, the main impacts were on aquaculture and livestock; 42,000 hectares of fish and prawn farms were damaged and 6.1 million animals drowned.

7. Financial mechanisms and incentives

In past years, about 15%-28% of the government’s budget was allocated for water resource development projects and small investments for watershed management also came from the private sector. Too few people are aware of indirect and transboundary impacts resulting from exploitation of watershed resources despite the effect they have on trade and markets. The Royal Projects have invested a large amount of money in encouraging highland populations to utilize watersheds for self-sufficiency by growing cash crops and fruit-trees using intensive soil and water conservation techniques. Today, the project, which works
from 28 extension stations, has benefited nearly 300 upland villages and affected the lives of at least 50,000 people.

Despite the fact that donor-assisted watershed projects have been underway in Thailand for nearly three decades, problems have worsened in every basin. Nevertheless, a comprehensive approach to land tenure, agriculture, agroforestry and community forestry, and the effective protection of parks and forest reserved, all integrated on a watershed basis, is the best hope for sustaining agricultural development in Thailand. While the problems are formidable, the new constitution’s emphasis on decentralization, participation, land tenure, departmental strengthening, community organization and NGOs, not to mention experience gained in past and current projects, give reason for some degree of optimism.

In 2003, the ASEM Trust Fund approved a Technical Assistance Funding Proposal of US$ 700,000 for “Participatory Watershed Management in the Ping River Basin”. The technical assistance is aimed at supporting and strengthening participatory approaches in integrated watershed management in the Ping River in Northern Thailand. The development objective is to improve environmental quality, which, in turn, will contribute to enhancing the livelihoods and health of the involved communities. This will be achieved by: (1) developing a participatory micro-watershed management model that provides access to all stakeholders in the decision making process (communities, local government agencies, and private sector enterprises), and demonstrating its implementation; (2) enhancing capacity of stakeholders, and especially local government and community groups, to participate in planning, implementation and monitoring of interventions; (3) strengthening regulatory and incentive mechanism to modify the behavior of watershed users and developing a results framework to monitor environmental, health and livelihood outcomes.

According to the recently published “Thailand: Environmental Policy Integration Analysis Report”\(^3\), an intervention to adopt regional planning of water and land resources based on major river basins, and involving the establishment of 8 river basin management committees, with technical support and basic information, would cost less than $0.6 million per annum averaged over five years. Annual support requirements should be expected to hold steady or to decline somewhat thereafter. These costs do not include planned natural resources management and agricultural development programmes. ADB will facilitate and support the reform process and assist with capacity building and training of regulators and stakeholders.

The planned “Year 2002 River Basin Development Loan Programme” should be used to lay the foundations for collaboration with the Government and other donors for a concerted attack on land restoration and water resource conservation in the Northeast. Furthermore, unless there are clear synergies or outstanding benefits likely from continuing work in the South and North, it may be necessary to concentrate available resources to reclaim the Northeast alone. A current cost estimate is unavailable but a rehabilitation programme in the Northeast would require a minimum investment of $120 million over a 10-year period. Most of the costs would be indirect including those associated with land titling and taxation, access to transportation routes and more effective local planning.

\(^3\) (H\text{http://www.adb.org/environment/AEO/pub/documents/thailand.pdf}H)
The Status of Watershed Management in Vietnam

Part II: Extended Version

0. Introduction

Vietnam is located along the Indochina Peninsula and extends 1,650 km from North to South with a maximum width of 600 km and a minimum width of 50 km. Vietnam’s topography slopes from west to east towards the sea with the mountainous areas in the west comprising slopes of between 25° and 45°. Vietnam’s 2,360 rivers, with a total outflow of 867 billions m³/year, run from west to east following the country’s topography. The country has two major river deltas: the Mekong River delta in the South and the Red River delta in the North. There are also several narrow deltas located in Thanh Hoa province and along the Central Coast. Together, the topography and river system of Vietnam create a patchwork containing hundreds of watershed areas.

Vietnam has 64 provinces and cities and a population of over 80 million. Thirty million people, including 12 million belonging to various ethnic minorities, reside in watershed areas. Due to a number of factors, including complex natural conditions, low population densities, poor education, poor infrastructure, underdeveloped markets and poor market access, many of the highland watershed areas are amongst the least developed in Vietnam.

While lowland populations of Vietnam, especially in urban areas, seem to benefit from increases in Vietnam’s prosperity, rural populations in the remote highlands do not share equally in the benefits. Furthermore, for recent economic advances to be sustained, the use and management of natural resources in watershed areas must be carried out in a reasonable (i.e. participatory) and sustainable manner.

The Government is aware that watersheds play an important role in national development especially in areas with a high proportion of ethnic minority groups. The importance of the role of watersheds is heightened by upstream-downstream relationships concerning the environment, water resources, land protection and socio-economic development. Watershed management received little attention until the late 1980s when mention of watersheds was first made in Government legal documents. Despite many improvements in watershed management, current results fail to meet requirements and the potential of watersheds is not appropriately tapped. There is also no comprehensive research on watershed management in Vietnam to help the Government in building a comprehensive and effective watershed development strategy.

Watershed management is seen by the Vietnamese Government as an approach by which to foster modernization in rural areas between 2005 and 2020. The following report identifies lessons learned and important issues in WSM that, to achieve the levels of progress desired, remain to be addressed in coming years.

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1 In this document, following a common definition in Vietnam, a watershed area is defined as an upland watershed area where the slopes are steep and the land is forestry land (with or without forests). For instance: Da River watershed includes the sloping areas of Van Nam plateau (in China) and areas of provinces in the North West of Vietnam. The lowland provinces (from the Hoa Binh Damp downward) are not considered as a part of Da River watershed even though Da River goes through them. The delta areas such as Hong (Red) River Delta and Mekong River Delta etc. are similarly not considered as watersheds.
1. Enabling regulations

Vietnam has signed several watershed management related conventions including: United Nations Convention on Biological Diversity (UNCBD) in 1994; Convention on Wetlands in 1989; United Nations Framework Convention on Climate Change (UNFCC) in 1994; United Nations Convention on Combat Desertification (UNCCD) in 1998; Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1993; Agreement on the Co-operation for the Sustainable Development of the Mekong River Basin (MRC) in 1995. The conventions have, step by step, been institutionalized into Communist Party and Government resolutions to form the legal basis for action within different sectors. They have also been integrated into national and local programs and strategies to further achieve the Government’s commitment.

Important laws on watershed management include the following:

- The law on water resource protection, approved by the National Assembly in 1988, creates a legal framework for national capacity building in planning, exploitation and management, with respect to both quantity and quality, of open water, underground water, salt water and river basins. The law established three institutions important in water resource management: the National Committee on Water Resources, agents to manage and plan river basin development and institutions to inspect water resources. The basic principles for managing water resources include: (i) water and land zonation by river basin; (ii) water and forest resource protection; (iii) water quality and quantity maintenance; (iv) water resource exploitation and conservation; (v) socio-economic development and environmental protection; (vi) national and local benefit.

- The Land Law, amended in 2003, is a legal framework, which identifies protection forest land as an important component in watershed management. According to the Land Law, village communities are appointed as land users and, according to the draft Forest Protection and Development Law of July 2004, forest land may be allocated to communities. According to the Civil Law 2005, however, village communities have no legal right in being allocated forest land. As a result, land and forest allocation are separated into land use rights (Land Law 2003) and forest use rights (draft Forest Protection and Development Law 2004). This separation allows village communities to contract forest use rights from the State.

- The Forest Protection and Development Law, issued in 1991, divides protection forest into 3 categories: very critical, critical and less critical. Based on the above laws, the Government defined national forest cover at 65%. Of this, 6 million hectares is designated as protection forest, 4 million hectares special use forest and 11 million hectares production forest.

There are two important legal documents on watershed management: Decision No. 08/2001/QĐ-TTg issued by the Prime Minister and specifically concerning protection, production and natural forest management, and Decree No. 86/2003/ND-CP which allocates the following responsibilities to the Ministry of Agriculture and Rural Development: river basin management; exploitation, use and development of rivers according to approved plans and management of structures, dike systems and storm and flood protection works.

In summary, existing policies support an integrated, inter-sectoral and inter-territorial watershed management approach, which ensures harmonization between top-down orientation and bottom-up needs and promotes stakeholder
participation in planning, implementation, monitoring and evaluation. Watershed management is decentralized such that the Central level is responsible for direction and state management via the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Natural Resources and Environment (MONRE). Local level institutions, particularly the Province governments, are mandated to implement the contents of watershed management plans, including those for inter-province watershed areas.

The current regulations, however, have the following limitations:

- A lack of clarity in regulations over integrated planning and management of watershed elements (forests, water and land) and the use of these elements by different sectors and at different levels. Despite existence of Codes of Law and documents under the laws on land, forest, water and environmental management, detailed regulations on resource management in watersheds are absent. Current legal documents treating land, forest and water as subjects independent from one another therefore need to be adjusted.

- There is mechanism linking the River Basin Management Board at the central level and in the provinces with lands in the river basin. There are several reasons: The River Basin Management Board was set up on the basis of requirements in local areas (provinces) located in downstream areas, while provinces located in upstream areas are underdeveloped and there is therefore a lack of commonality in objectives.

### 2. Institutional framework

In recent years, the Vietnamese Government has been completing reforms of its management and organizational systems and has reinforced its efforts to decentralize watershed management. Orientation and state management in implementing watershed management activities were assigned to three institutions: the Ministry of Agriculture and Rural Development (MARD), the Ministry of Natural Resources and Environment (MONRE) and the National Committee on Water Resources.

According to Degree No. 86/2002/NĐ-CP, the watershed management function of MARD is to manage two of the three most important resources for WSM, forest and water (see Annex 1 (V)). The forest management function is assigned to two departments under MARD, the Forestry Department and Forest Protection Department. The Forestry Department surveys and instructs state management on nationwide forestry, especially forest planting, forest resource development, forest product exploitation. The Forest Protection Department develops and guides state management of forest resources with respect to forest protection and forest product management.

Responsibility for water management and utilization is assigned to the Irrigation Department. Responsibilities include utilization and protection of irrigation systems; rural water supply; management of river basins; development of rivers and flood and drought protection. The Office for River Basin Management and Planning, set up under the Irrigation Department, assists the Director of the Irrigation Department to carry out his task of managing River Basin Management Boards.

According to Degree No. 91/2002/NĐ-CP, MONRE has the mandate to conduct state management of water and land resources (see Annex 2 (V)) and serves as a National Standing Committee on Water Resources. Water resource management is assigned to the Department of Water Resource Management, which is responsible for planning and policy, surface water management, underground
water management, water resource management, water resource basic survey management and awareness raising & training. Land management is assigned to the Land Department, which is responsible for classifying land, land statistics and monitoring.

The National Committee on Water Resources consists of the following members: Deputy Prime Minister as Chairman; MONRE to be a Standing Institution; Minister of MARD to be a Standing Member; Deputy Ministers of MARD, Ministry of Science and Technology, MONRE, Ministry of Planning and Investment, Ministry of Finance, Ministry of Defense, Ministry of Construction, Ministry of Communication and Transports, Ministry of Industry, Ministry of Health, Director of General Department of Hydrometeorology, Administrator of the Committee and some water resource consultants to be permanent members; Representatives of the central and local organizations relating to specific issues that are raised in the meeting of the Committee are invited to be temporary members by the Chairman. The National Committee on Water Resources provides consultation for the Government on:

- National water resource strategy and policy;
- Approval of large river basin plans;
- Transfer of water in large water basins;
- Government projects concerning protection, exploitation and water resource;
- Preventing, protecting and repairing flood damage and other damage caused by water;
- Managing, protecting, exploiting and using international water resources;
- Solving water resource disputes among ministries, branches, provinces and cities.

Organization and implementation of the following watershed management activities is decentralized to the provinces:

- Planning for management of watershed areas having a protection role for rivers and reservoirs within the provincial territory;
- Organization and implementation of activities related to protection and development of water sources;
- Water use;
- Land management;
- Socio-economic development through provincial, national or international programmes.

Of these activities, those related to forest protection and development are implemented by the Forestry Sub-Department (under Provincial DARD) and the Forest Protection Sub-Department (under Provincial People’s Committee). Protection forests are managed directly by The Protection Forest Management Board (under Provincial People’s Committee or Provincial DARD). Several provinces also have Watershed Management Boards under the Provincial People’s Committee but there are currently no specialized watershed management institutions at the district level. Non-state-owned organizations are involved only in supporting development projects in watershed areas.

Problems in the institutional and organizational system include the following:

- Due to sectoral decentralization, there is no agreement concerning protection, utilization and development of watershed elements (land, forest and water). Although the Irrigation Department is responsible for managing river basins, management of land, forest and water is decentralized to other agencies such as the Department of Water Management (under MONRE), the Department of
Land (under MONRE), the Department of Forest Protection and the Department of Forestry (under MARD). In general, WSM in Vietnam suffers from lack of agreement between sectors over management and use of land, water and forest.

- Management of watershed areas by State-owned institutions has only recently been devolved to the provincial level and the current capacity (including human resources) of these institutions is inadequate to meet requirements. Furthermore, there are no organizations at the district and commune level assigned to manage and develop watersheds and district and commune staff lack the necessary knowledge and skills to develop, guide and implement watershed management.

- The River Basin Management Boards lack the power to settle inter-provincial watershed issues. According to Decision No. 14/2004/QĐ-BNN, the River Basin Management Boards are co-management organizations designed to deal with achieving and monitoring objectives. Members of the Board include the leading representatives of provincial departments located in the river basin and representatives of Departments of MARD. As the boards are not executive organization, they lack the power to control provinces within river basins and are therefore unable to resolve river basin related issues.

3. Consistencies in planning processes

The watershed management planning system in Vietnam includes regional and territorial planning in combination with sectoral planning (see Annex 4 (V)) as follows:

- The central level is responsible for developing river basin plans. Since 2002, seven large river basin plans have been developed and seven inter-provincial River Basin Management Boards, focusing on land and water use and forest protection, have been set up. The river basin plans are approved by the National Committee on Water Resources.

- Provinces, districts and communes develop 10-year socio-economic plans. Based on the overall planning framework, provinces develop plans for river and lake basin management, which are however, are mainly focused on forest protection. Guidelines on procedures and content for local implementation are not yet included.

- Sectoral planning related to watershed management includes land-use, agriculture, forestry and water resource planning. Sectoral plans are made at all levels: central, regional, provincial, district and commune. Provincial and district level planning is, however, more detailed whilst commune level planning is confined to land-use and forestry planning.

Linkages between sectoral and provincial watershed management planning are clear given that the same four components are followed: land use, agricultural, forestry and water resources. These linkages are, however, not applied in watershed management planning at the district and commune levels.

Provincial, district and commune planning entails the “two down one up” process whereby the higher level directs, the lower level develops plans and the higher level approves.

The higher level directs according to orientation provided by National Programs and Objectives, Decisions of People’s Committees and plans prepared by upper level agencies. Plans developed at the lower level are based on six land categories (agricultural land, forest land, rural land, urban land, specialized land
and non-use land (according to Land Law in 1993)), three forest categories (special forest, protection forest and production forest) and three forest protection levels (very critical, critical and less critical). The draft plans are then agreed upon by the local People’s Committee and submitted to the higher level for approval.

Provincial and district planning is inter-sectoral and includes dialogue with representatives of local communities. Planning at commune level uses Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA) methods (see annexes 4, 5, 6, 7, 8, 9 (V))

Vietnam has also implemented National Objective Programmes relating to watershed management as follows:

- The National Program on Poverty Reduction and Job Creation of 22/8/1998 focused on remote (and watershed) communities to eradicate hunger and reduce poverty incidence at the household level to under 10% and increase rural labor usage to 80% by 2010.
- The Socio-economic Development Program for poor communities in mountainous and remote areas ("135 Program") was approved on 31/7/1988 with the overall goal of improving the livelihoods of ethnic minority people living in mountainous and remote communes and creating conditions enabling poverty elimination in these rural areas.
- The 5 million hectare Afforestation Program established at the 2nd Meeting of the 10th National Assembly in 1988 includes objectives relating to watershed management up to 2010: to plant new forest and protect current natural forest to increase national forest cover to 43%; to contribute to environmental security; to lessen the consequences of natural disaster; to increase water resources and to conserve genetic resources and biodiversity.

The Government has issued watershed related policy at national, local and sectoral levels and over 40 mountainous and midland provinces and districts prioritize watershed management in their socio-economic strategies.

Although the watershed management planning system is developed in its basics, there remain some problems to be solved:

- There is no clear identification of the agency, particularly at the provincial level, having the appropriate capacity and authority to manage watershed management plans. At the provincial level, the Protection Forest Management Board, under the Department of Agriculture and Rural Development, and the Provincial People’s Committee manage provincial protection forest. As River/Lake Basin Management Boards are absent in most provinces, these agencies support management and implementation of protection related activities. However, they are not able to coordinate provincial sectors (agriculture, forestry, irrigation, transportation, finance) in implementation of the provincial river basin plan.
- Current regulations consider that watershed management should implemented within individual sectors. This has, however, led to poor efficiency in watershed management and, in fact, there is no watershed planning in Vietnam, only basin level planning and protection forest planning in some provinces. River basin planning has recently been institutionalized and contributes to socio-economic development planning, land use planning and forestry planning. Protection forest planning is aimed at managing forest coverage and protecting water resources and each sector plans and implements activities with the objective of watershed management. The River
Basin Management Boards undertake river basin planning but are unable to implement their plans.

- Relationships between river basin plans developed by River Basin Management Boards and Provincial plans for watershed areas within provinces are unclear. Currently, provinces adhere to master plans, socio-economic development plans, land use plans, forestry plans, etc. as basin level planning has only recently been implemented for a limited number of few rivers. Integration of provincial plans into river basin plans needs significant improvement.

- At lower levels, watershed management planning and implementation are often not completed. Awareness of WSM and management of natural resources varies between levels and the concept of watershed management planning has yet to be introduced at the commune level. At the district level, understanding that planning is to be oriented towards protection of water resources is beginning to take root.

4. Implementation experiences

There are two forms Land and forest allocation: (i) state-owned institutions (from the district level up) grant long term land use certificates for up to 50 years for forest land and 20 years for agricultural land; (ii) contracts on land and forest are issued by state-owned forest enterprises for land and production forests and by forest management boards for protection and special-use forests.

Up to the year 2001, of the 7,956,392 hectares allocated, 2,006,464 have been to households and organizations. 2,348,294 hectares of forest are managed directly by communities under different management types: (i) traditionally forest management, (ii) forest is protected by other forest owners under contract, (iii) local authorities managed forest temporarily.

After land is allocated according to five rights (land use, transfer, renting, inheritance and mortgage), use of land contributes more effectively to economic, social and environmental goals (increasing income, generating jobs and conserving soil and water resources). Agroforestry, Sloping Agricultural Land Technology (SALT), Forest-Garden-Fish Pond-Pigsty models (RVAC) and Community-based forest management contribute to these aims and are popular in watershed areas.

Forest Management Boards and Reservoir Management Boards, besides their responsibilities for management, protection and development of protection forests, special-use forests and water resources, have included eco-tourism amongst their business activities. The Government has also strengthened investment in watershed areas through the 5 Million hectare Reforestation Programme and Poverty Reduction Programme, Programme 135 in rural infrastructure development, which targets 2500 of the poorest communes in remote areas.

Currently, land and forest allocation to communities is legally sanctioned but in many cases is not yet officially acknowledged. As community-based forest management is popular in watershed areas and has many advantages, the situation should be improved:

- Local communities, especially in remote areas, manage and use forest according to traditional methods. The communities therefore have a deep knowledge of management that is not yet reflected in official policies and
acceptance of the community as the legal subject always benefits forest management;

- Legitimate needs, including wood supply for house construction, maintenance of water resources or spiritual ceremonies if considered part of the broader system will help strengthen bonds between communes and higher levels;

- Experiences show that, community based forest management is better accepted by stakeholders because as community members receive equal benefits and responsibilities and awareness of the importance of forest is raised.

Vietnam has been developing 50 protection forests with total area 5.6 million hectares although there is no clear delineation between the forest management board and the local community in forest resource use. Until now, the relationship between the Protection Forest Management Board and communities followed Decree No. 01/CP 1995. However, the responsibilities and benefits of the community to which protection forest has been allocated are not clear.

Regarding watershed areas, the following tasks are necessary if the community is to be effectively engaged in watershed management:

- Plan the sustained supply of forest products from forest areas taking into account the estimated minimum annual community consumption.

- Create plans to protect water resources and religious forest in community forest areas.

- Plan the minimum area of land to be burned to ensure food supply to the community.

No specific study has evaluated experiences and lessons learned in community-based management and use of land, water and forest resources in watersheds in Vietnam. Until now, there are no research projects concerning watershed areas, although relevant research is integrated into other fields.

5. Capacity building

Research on watershed management

There are three main gaps in watershed management research: (i) the relationship between upstream and downstream areas and between regional and provincial areas; (ii) modes of effective, consistent and integrated management of land, forest and water in watershed areas and (iii) policy mechanisms appropriate for communities involved in watershed management.

Several research institutes and universities are involved in watershed management research:

- The Institute of Water Resource Research (IWRR) is mandated to implement research on water usage and irrigation constructions. Typical of research in recent years has been the application of mathematical models in integrated planning and management of water resource (e.g. Da river). The IWRR is also involved in research, planning and design of irrigation work and has prepared the integrated plan for utilization of water resources Red and Thai Binh river basins.

- The University of Irrigation has been involved in research related to water use and irrigation at the national level.
• The Vietnam University of Forestry (VUF) focuses mainly on research concerning systems of forest and land use in watershed and protection forest areas.

The research system is highly divided by topic, theme and content and also in terms of organization involved. Specialized research institutions therefore implement research on relatively narrow topics and there is no comprehensive watershed study and research programme at the national level

Training on watershed management

Training and education in watershed management and some related subjects have recently been integrated into curricula at the Water Resource University and Vietnam Forestry University. These institutions do not, however, offer a watershed management specialization or watershed management, as a major subject and training materials on WSM are inappropriate in content, quantity and quality. Furthermore, there are few staff specialized in watershed management and no refresher programmes available to them. Several short courses in watershed management have, however, been organized by foreign-assisted organizations.

VUF have introduced watershed management in the training curriculum. However, the information provided does not yet match the reality of sustainable watershed management and lessons focus mainly on the classification of protection forests. Knowledge on watershed management remains scattered in a range of different fields including forestry, agriculture, irrigation, transportation, extension, etc. These fields lack interconnections and efforts have not so far been undertaken to collate all available information on WSM.

Extension

The state agriculture and forestry extension system was established from the central to the district level with about 5000 regular extension workers, i.e. only 1 for every 12,000 farmers. An extension system continuing to the community level is being established but has not yet been fully institutionalized. At present, there are no non-state-owned organizations providing agriculture and forestry extension services and agriculture and forestry extension activities are more concerned with technology transfer, e.g. seed/seedling distribution, land-use, plant protection and plantation, cultivation and management techniques. There is, however, a lack of linkage between these activities and watershed management objectives. Agriculture and forestry extension activities have been implemented in watershed areas although the results are modest due to the limited capacity of extension staff and restricted budget.

In human resource development the following areas should be addressed:

• Improving knowledge on general planning, multi-disciplinary approaches and macro level management for national and provincial staff.

• Creating integrated research programs in watershed management. This requires research leaders who can draw research staff from different areas.

• Improving the availability of watershed management workbooks and training materials.

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2 National Center for Agriculture Extension and Forestry Extension Board under MARD, Provincial Agriculture and Forestry Extension Center under Provincial DARD and District Extension Unit under District DARD
In general, knowledge on watershed management is deficient in many sectors and government agencies especially at local levels.

6. Impact monitoring

The River Basin Planning Management Office, under MARD, is the monitoring agency for specialized activities in watershed management, including: the master plan and planning and implementation carried out by the River Basin Planning Management Board and the provinces. Impact monitoring is conducted by the Environment Department, under MONRE, through the standard national system for environmental management.

Generally, impact monitoring and evaluation related to watershed management has not yet been implemented. Only a few small projects in watershed areas have been evaluated and although some environmental impact assessment has been carried out, it is used only for research purposes.

There are, however, some projects active in impact monitoring such as the ADB supported Vietnam Forestry Sector Project, which has assessed the environmental impacts of different projects. The World Bank has developed a method to assess the socio-economic impact of forestry activities in Vietnam including those related to watershed management. The Forestry Sector Support Program has recently completed a draft concerning the system for forestry sector monitoring and evaluation.

In principle, impact monitoring and evaluation of national development projects in watershed areas is implemented by the provincial administration. For “Project 661” (a component of the 5 Million Hectare afforestation programme), there is a provincial project management section in the province. It is reckoned, however, that the main objective of provincial administrations, when designing impact monitoring activities is to obtain funding. Once funds for impact monitoring have been received, specific terms for project impact monitoring are often not defined.

Within the Forestry Department a network links the national project office with provincial offices to update information at monthly, quarterly and yearly intervals. However, the network only focuses on implementation and not impacts.

Several areas require improvement in this field:

- Standardized criteria, indicators and methods should be agreed upon for evaluation of the impact of human interventions on watershed areas, as these have not been issued by the state or individual sectors. Only sector-specific, and therefore often competing, systems of standards and indicators have been developed.

- There are no regulations or methods for monitoring and evaluating implementation of watershed management plans by different sectors. At the central level the Management Office of the River Basin Planning Management Board based in the Irrigation Department under MARD and even MARD itself is unable to coordinate, monitor or evaluate implementation of sectoral watershed management. At the local level, neither the Forest Protection Management Board nor the River Basin Management Board in the province are able to monitor the implementation of river basin plans by provincial sector agencies.

- The utilization of impact monitoring data is limited, since no official regulations exist regarding responsibilities, benefit sharing or transfer payments between stakeholders in upstream and downstream areas;
• A multiple objective system should be established for watershed management planning. The impact monitoring system should integrate objectives and indicators related to poverty reduction and sustainable development;
• A monitoring system in line with international standards should be established for each river basin.

7. Financial mechanisms and incentives

Financial mechanisms for watershed development include:

(i) Direct state budgets for planning and management of river basin and watershed areas in provinces;
(ii) State budgets through national programmes and projects for implementation of watershed development activities;
(iii) State preferential credits for production enterprises in areas where watershed protection objectives are targeted;
(iv) State preferential credits for production enterprises in areas where watershed protection objectives are targeted;
(v) Reimbursement transfer payments from institutions and organizations in areas benefiting from protection of upstream areas.

Of these mechanisms, items (iii) and (v) as yet play a very limited role. At present, the government is encouraging investment in areas including construction of hydropower works in Dak Lak, Ha Giang and Lao Cai provinces, development of ecotourism, establishment of industrial forests on production land to meet watershed protection and production objectives according to the "Protection through Production" principle.

Issues to be addressed regarding financial mechanisms include:

• Establishment of clear and concise direct budgeting, investment and credit mechanisms for watershed area development;
• At present there are no regulations concerning responsibilities, benefits and payments between users and beneficiaries in upstream and downstream areas and between sectors. The reasons for this include the following: (i) There is no method in Vietnam to evaluate the value of watershed elements; (ii) Vietnam is applying a responsibility implementation mechanism through which benefits are paid into a state budget (applied to State Owned Enterprises) and returned through state investment; (iii) if enterprises have to pay for fully for resources, production costs and product prices will increase and this will have negative effects on the National economy. This issue is very important to some state owned production sectors such as the hydroelectric industry and irrigation-based enterprises.
• The establishment of reimbursement mechanisms to generate funding for watershed development and protection;
• Encouragement of policies from the provincial administrations to attract investment for construction of hydropower plants and other infrastructure works in watershed areas.
The Status of Watershed Management in Cambodia, Lao PDR, Thailand and Vietnam

Part III – Annexes
Cambodia

Annex I: Participatory Land Use Planning in Cambodia

Annex II: Community Forestry Guidelines

Annex III: Training of Facilitators in Participatory Land-Use Planning in Cambodia
Annex I:

Participatory Land Use Planning in Cambodia:

Background

Declining natural resources and land conflicts have become a major problem in Cambodia. In order to counter these negative impacts on the livelihood of the rural population and the assets of the whole country, the application of new tools focusing on integrated long-lasting development is absolutely necessary.

The Statement of the Royal Government of Cambodia on Land Policy (May 2001) and the Strategic Land Policy Framework (currently under preparation) both suggest that local land management and planning authorities, which have been given the political mandate to carry out all kinds of land management activities, need to be decentralized to local and provincial authorities in line with the overall governance policy of promoting deconcentration and decentralization.

The Concept of Participatory Land Use Planning (PLUP)

PLUP is a planning process starting from the village level in which all villagers and all other stakeholders jointly plan the use, the protection and the allocation of all land and water areas within their village boundaries. In this process they are assisted by neutral facilitators from outside the village.

PLUP needs to cover all land and water areas, such as all agricultural land, forest areas, settlement areas, fish ponds, lakes, minefields etc. PLUP will help the villagers in cooperation with the relevant government institutions to clearly define how they will use or protect each of these areas in future. In this process the management responsibilities are clarified and it is decided who will have the right to use which kind of land and natural resources. Eventually, if there are poor and landless families in the village, PLUP will help to identify spare areas suitable for agricultural production, which will later be allocated to these families. Finally, villagers will be encouraged to draft rules and regulations relevant for all these land areas (based on the law and relevant sub-decrees) as well as detailed management plans for community forestry or community fishery zones.

Steps of PLUP implementation in a village:

The implementation of PLUP in villages and communes takes place in 9 steps. The time frame from step 1 to step 8 should be 4 -6 months in the ideal case. The working load for facilitators is about 10 days per month:

The comprehensive approach of PLUP is recommendable to:
- Identify land-use options acceptable to all stakeholders.
- Strengthen their capacity to manage resources in sustainable ways.
- Create a framework that is socially acceptable, environmentally sound, politically desired, and economically viable.
- Overcome "sector-thinking" attitudes of government departments and offices.
- Build up or use existing communal and village structures and committees as a frame for participatory processes.
Step 0: Getting Started (Preparations)
(Selection and training of PLUP facilitation teams, assessment of existing data and information, purchase of required materials and equipment, selection of the working area)

Step 1: Preparation of Field Work
(Inform local authorities, conduct an introductory meeting in the selected village)

Step 2: Situation Analysis in the Community
- Analysis of socio-economic aspects
- Analysis of institutional aspects
- Analysis of past and present use of land and natural resources
- Analysis of current land and NR use conflicts
- Boundary demarcation, transect walks and mapping
- Preparation of the final present land use map

Step 3: Identification and Screening of Options for Land Use Changes (Done by villagers and facilitated by provincial/district staff)

Step 4: Creation of a Village NRM Committee
(As a sub-committee to the Village Development Committee)

Step 5: Preparation of Future Land Use Plan, Village Regulations and detailed Management Plans
- Future land use map
- Facilitate drafting of village regulations
- Community Forest or Community Fishery Management Plans

Step 6: Submission of the Land Use Plan, the Regulations and the Management Plans for Official Endorsement and Approval
(Typing of regulations, preparations for signatures, signing by village, commune, district and provincial authorities)

Step 7: Link to Extension Services and Land Registration by PDLMUPC
(Support implementation of NRM activities in the village, land registration, land allocation, conflict resolution)

Step 8: Monitoring and Evaluation
In PLUP M&E compares the present situation with the situation before the implementation of certain activities, plans, regulations, and processes. It helps to decide whether activities, plans, enforcement of regulations, and processes should continue in the future or need to be changed. These decisions have to be made in a participatory way
Experiences

In view of providing competent support to all commune councils with regard to participatory land use planning on the local level, a comprehensive training programme for facilitators in PLUP has started with support by various donors. In a first step, the 9 active national PLUP trainers currently working with the Ministry of Land Management, Urban Planning and Construction, the Ministry of Agriculture, Forestry and Fishery, the Ministry of Environment and for various donor-funded projects and programmes have attended a training of trainers (ToT) course in March 2002. These national PLUP trainers are now working in teams of 3-4 members to train facilitators from NGOs, provincial, and district staff from the following line agencies: Agronomy, Forestry, Fisheries, Land Management, Rural Development, and Environment. These participants working on the provincial and district level will form PLUP facilitation teams of 3-5 persons after the training and will start supporting local level in land use planning activities.

Problems and Outlook

The Dept. of Land Management, Urban Planning & Construction has the official mandate to carry out land-use planning, land classification and land allocation. But most of their staff on national as well as on provincial level lack basic knowledge on natural resources. To overcome this, capacity building and intensive cooperation with professional institutions dealing with natural resources is recommended.

Considering the current situation in Cambodia, a successful implementation of PLUP on village and commune levels can only take place if:

- The government authorities clearly demonstrate their political will to support decentralization, transparency, and the bottom-up approach of the PLUP process by acting according to their written and oral statements.

- An agricultural extension program is connected with land-use planning, land classification and allocation. This is a must to provide people with opportunities to generate food and income so that they don't need to encroach forests.

Future activities

In order to further optimize and promote PLUP in Cambodia, it is planned to:

- Follow up, monitor and evaluate PLUP activities in the province
- Organize workshop among trainer to improve training modules and methods
- Initiate PLUP extension in the commune council
- To create a PLUP network between national and provincial level under the leadership of the Dept. of Land Management and Urban Planning
- Planning workshop to improve/update PLUP manual
- Set up a PLUP database similar to the CF database
Annex II:

Community Forestry Guidelines
(Draft Summary)

Community forestry practitioners in the future
Field Guidelines for Community Forestry in Cambodia

Introduction: Purpose of the Field Guidelines

These field guidelines describe a suggested methodology and process for implementing community forestry development in Cambodia and are intended for field-level use. The guidelines incorporate concepts and methods used and tested by field projects in Cambodia and other countries, reflecting both widely applicable ‘best practices’ and differences associated with specific field contexts. They are intended for use by people in local communities, in government agencies, and in donor and non-governmental organizations engaged in promoting and supporting community forestry development in Cambodia.

The first section describes how community forestry may be planned and organized, at provincial and local levels, within the Provincial framework for development in Cambodia. It outlines participatory processes and activities for developing practical plans and appropriate organizational structures for Community Forests, needed for mobilizing sustainable local participation in forest management. The following section discusses resolution of competing claims to proposed Community Forest at the planning stage.

Before describing the suggested approach to planning for community forestry, it is important to set out what the planning is for, who does it, where to get technical and other support from, and what a community is and what a community forest is.

What is planning for?

Planning the process through which people establish agreement on objectives and action regarding their forest and other resources.

Planning for community forestry needs to be carried out at the local level to ensure genuine local participation, and at the provincial level to establish legitimacy for local rights and responsibilities and to integrate local, provincial, and national plans for forest-resource management.

Provincial level planning

Provincial level planning aims at collecting, analyzing, and providing information needed for developing and guiding provincial-level programs that encourage and enable government and non-government organizations to promote and support community forestry, and thereby supporting local-level planning for community forestry. In particular, it is important to:

- find out where forest-dependant communities are, and how local communities use and manage forests;
- find out where the forests are, the condition of forests, and to identify which are protected areas (under the Ministry of Environment), flooded forests (under the Department of Fisheries), privately owned, under concessions, or other forest types and allocations.

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1 The RGC is introducing an integrated development framework in provinces, based on the SEILA Programmed promoted and supported by CARERE.
Information needs to be compiled, analyzed, and stored. Where the facilities exist, or can be provided, the use of computers in developing and storing information is invaluable, though not essential. The information is made available and used for the development of community forestry.

**Local Level Planning**

Local level planning forms the basis of implementing community forestry, where local people, government, and non-government and private-sector agencies work together to improve forest management, solve problems, and develop forest resources for future needs.

The main emphasis of local level planning is on involving communities in assessing their forest use patterns and needs, and developing community-based plans for meeting their forest-related objectives and needs. Local level planning aims to:

- introduce the concept and purpose of community forestry to communities, and build trust between field staff and villagers
- start discussion within communities regarding local interest in forests and forest resources, and community management of locally-used forests
- collect information about forests and forest resources, what people use them for, and how they manage them
- find out how the villagers organize themselves for managing the forest, and to suggest how to form committees or other structures that may be necessary for ongoing management
- identify and demarcate forest areas for local management, and develop forest management plans

Local level planning needs to be fully participatory and to involve close co-operation between communities and field staff. To encourage this, it is advantageous if it takes place as far as practicable in the local language and using local terminology, classification systems, and other knowledge.

**Support for community forestry planning and implementation**

It should be borne in mind that the community forestry process requires support to the communities of various kinds if they are to prepare for a Community Forestry Agreement with the government, and implement their plans effectively. The sources of such support which may come from a development agency or other government body involved in rural development, needs to be identified when planning for community forestry. The kinds of support needed include:

- technical planning skills (for obtaining resource information and information on communities, storing the information, updating it regularly and presenting it on maps or in other forms that are easily understood)
- technical forestry skills (including an understanding of technologies available and their applicability, particularly for silviculture and tree seedling production)
- facilitation skills (how to work with local people, find solutions to problems with them, understand their day to day situation)
- communication skills (including local languages, where appropriate).

**What is a community?**

Community is a flexible term that can apply to a small group or a large group. For the purposes of community forestry, a community is that it is a group of people that identifies within itself as sharing common interests and sharing a common future. Generally, the village is taken as the basic level at which people decide whether and how to undertake a shared effort for improving forest management. Often, a Village Forest Committee
(VFC) serves as the mechanism for focusing and communicating about villagers’ interests and needs related to forests and forest resources and is most effective if it is open to everyone within the village – families, monks, school teachers and any minority groups. It is often the case that two or more villages use the same forest area. In such cases overlapping uses or claims can result in conflict between villages. In such situations, the “community” becomes, in effect, more than one village – it may be several or even a dozen villages; sometimes the villages are within a single commune or district, but may be in more than one commune or district. To meet the needs for communication about forests among multiple villages, an inter-village Community Forest Association (CFA) may serve as an effective mechanism for focusing and communicating among villages that share common interests and needs related to forests and forest resources.² The CFA may be comprised of representatives from the Village Forest Committees of respective villages, as well as representatives of commune and district administrations, if appropriate. For CFAs to function smoothly, byelaws need to be developed and adopted to ensure that balanced representation and participation is maintained.

What is a Community Forest?

A Community Forest, for the purposes of these Guidelines, is a designated area that is managed by a local community, through a community-based organization in accordance with a Community Forest Management Plan, and with user rights vested in the community by the government, as detailed in a specific agreement. A Community Forest may be established in any area where

- a community has a demonstrated/verifiable pattern of use or interest in the area, and agrees and commits to manage the area as a Community Forest, as described above, and

- competing claims to the area/resources proposed for the Community Forest do not exist or are resolvable through mutual agreement among all claimants.

The designation of a Community Forest by responsible authorities is an act of the government, documented in a Community Forest Agreement, and carries full legal validity. Designation of a Community Forest entitles the responsible community to defined benefits from the Community Forest and makes the responsible community liable for defined management obligations. The Community Forest Agreement may have a specified period of validity, say 30 years. This may be automatically renewed unless terminated in accord with provisions for termination of the Community Forest Agreement. A Community Forest or Community Forest Agreement cannot be sold, transferred, or used as a secured debt.

Steps in Provincial Level Planning

The planning is built on basic information, on forest resource conditions, forest resource use and tenure (legal and customary), the interests and potential of local communities to manage forest areas, and the capacities of different agencies for promoting and supporting community forestry. This information is used to plan provincial level community forestry activity, according to provincial development priorities and within the resources available. The appropriate body (or bodies) to undertake community forestry activities at provincial level varies, in the present day context in Cambodia, from province to province. Many relevant provincial departments and offices, including the Provincial Forestry Offices, currently lack both the resources and professional orientation for community-based forestry work. It may be appropriate, as an interim measure, to form an inter-agency

² This inter-village Community Forest Association is the same type of organization that has been established in the MCC-supported community forestry project in Takeo, the CONCERN-supported community forestry projects in Kampong Chhnang and Pursat, the FAO-supported community forestry project in Siem Reap, and the NTFP project in Ratanakiri.
group such as a community forestry secretariat which supports and facilitates the community forestry activities at provincial level. The approach to planning community forestry activity in the province should be gradual and phased, building on relevant planning capacities (and financial support) where these are already established.

Organization and preparation
- Ensure that the team to be engaged in planning work have an adequate grasp of the principles and scope of community forestry, of participatory planning techniques, and basic mapping techniques. If computer equipment is provided, ensure that the team has the capability to operate and maintain the system
- organize the planning work (assign responsibilities for tasks to be carried out, draw up work schedule, secure financial and logistical support)
- procure equipment, tools, maps, data, documents
- prepare general mapping and data forms and procedures
- set up links with appropriate provincial and national agencies/units

Technical preparation
- define expected planning outputs (types of forest resource units, criteria for identifying units, mapping methods, scales and tools, map layout and presentation, reporting, etc.). Remember that units will need to be flexible to incorporate local terminology, classification systems, and other local knowledge as it becomes available.
- identify needed and available information, official data, and local knowledge
- collect relevant data (maps, digital data, aerial photos, etc)
- compile and store data in shared database
- establish system for linking local data (from local planning) with provincial data

Put the data together for use in planning community forestry activities in the province
- compare and combine information on the forests, the communities, and community uses of the forests
- assess which products the communities use, how much of them they need, and how much the forest can supply
- assess the suitability of different areas for community forestry
- prepare and provide maps and that can help communities undertake planning with field staff, and also have enough detail to serve in applying for the designations of forest areas as community forest.
- when new data becomes available; revise the maps
- make information available to community forestry planners, field staff, and support organizations
Identification of suitable areas for community forestry

Areas with high suitability for community forestry are generally characterized by:

- active forest-resource use by local people, such as for extraction of firewood, timber for local construction, medicinal plants, fruits and nuts, rattan and bamboo, livestock fodder or grazing, and swidden agriculture (including periodic forest regrowth)
- historic or cultural use of forest by local communities, such as ancestral claims, burial grounds, or spirit areas
- local communities characterized by reasonable stability, respected leadership, and willingness to organize
- apparent and locally perceived benefit from maintaining or increasing local forest resources from forest and/or non-forest areas
- existing community-based forest management or other community-based development efforts that indicate local experience and capacity relevant to community forestry
- reasonable expectation for negotiated resolution of disputes involving competing claims to the target forest area and its resources.

Conversely, areas lacking the above characteristics are problematic for community forestry and greater difficulties can be anticipated.
Steps in Local Level Planning

Local-level planning and mobilization of community forestry usually proceeds through a series of progressive steps. The steps in this section provide general recommendations and guidance regarding activities, procedures, and sequencing in local-level community forestry planning; however, the exact set and sequence of activities may vary. An overview and schematic diagram of the steps in local-level planning is provided in Figure 5.2. Additional detailed guidelines for some of the Steps and for community forestry planning in relation to forest concessions and protected areas are provided in Section 5 and in appendices.

These steps, up to the Designation of Community Forest, may be followed by any group or agency that is involved in assisting communities that are developing management plans for their community forests and seeking government approval for them. Such agencies may also facilitate the process of community forestry designation and provide ongoing technical and other support.

Figure 5.2. Steps in Local Level Planning
Details for activities in steps in local-level planning are provided below.

**Preparation**

- Where the agency taking these steps is not government authority responsible for the designation of community forests, the first step will be to establish liaison with the appropriate authority to ensure that co-operation occurs through the process, particularly for the designation of the community forest.
- Establish facilitation team; clarify TORs, roles, responsibilities, support among participating agencies/organizations
- Train facilitation team
- Collect and review existing information: village & forest data, plans, maps, etc
- Make preliminary contact with target village(s) and schedule orientation visit to village(s)

**Local Orientation**

- Introductions; clarify objectives and roles among agencies and local people
- Introduce idea of community forestry, policy, scope
- Semi-structured interview with community group, village walk, forest walk; basic data collection/verification about the community, initial assessment of local interest/dependence on forests (including initial gender analysis), initial identification of stakeholders
- Discuss, review, and analyze results with village(s); plan for further steps

**Gender Analysis of Forest Use**

It is essential that assessments of forest resource use and management options include the input of women because:

- Women and men often have different uses and needs for forest resources and are therefore impacted differently by forestry projects.
- Women are active forest users and managers of the forest, but as forestry is considered a man’s field, women’s roles are often invisible to project designers and policy makers.
- Equity and justice.

From *Women in Community Forestry, a field guide for project design and implementation*, FAO, 1989

**Community meeting and initial organization**

- Discuss interest in community forestry with village(s)
- Introduce community forestry planning program
- Plan for further steps

**Information collection**

- Community assessment: demographics, organization, economy
- Forest use/dependency assessment (including gender analysis), local area mapping including local forest use/claims (land use pattern and local boundaries), preliminary forest inventory, indigenous forest management assessment
- Determine if there are any overlapping claims for the area in consideration. If so, address these. *(See also section 4.4, on addressing overlapping claims)*
- Discuss, review, and analyze results with village(s); plan for further steps
Formation of Village Forest Committee / Community Forest Association

- Establish initial village organization(s) to conduct community forestry planning
- Review results with village(s); determine village(s) preference regarding establishment of a Community Forest
- Discuss role and structure of Village Forest Committee / Community Forest Association
- Organize Village Forest Committee / Community Forest Association
- Plan for further steps, including the setting of bylaws, if necessary

Preparation of an Application for Designated Community Forest

- Participatory mapping and boundary demarcation of Community Forest
- Prepare an Application for Community Forest, including
  - Assemble the following information:
    - the location/geodata and general bio-physical resource description of the proposed Community Forest. If possible, this should be placed on a 1:25,000 map, but whatever form of mapping is used the location of key features should be clear. A sketch of these features on a copy of an aerial photograph may be suitable, for example.
    - the location, demographic characteristics, main livelihood(s) of the community; and forest use and/or customary tenurial claim(s) by the community (village/villages) to the proposed Community Forest
    - the general management objectives of the proposed Community Forest
    - the composition of the proposed Village Forest Committee(s) / Community Forest Association.
    - Discuss/verify the information with the applicant community
    - Submit the application to appropriate authorities
    - Upon designation of the Community Forest, plan for further steps

Community forest management planning

- Review the community forest management plan periodically, ensuring that all stakeholders are identified and involved in forest management, to the extent appropriate
- Review issues and strengthen community forestry objectives
- Assemble any quantitative data or description on the forest resource. In some cases, it may be appropriate to carry out a light inventory, provided the results can reliably be expressed in terms that villagers can readily understand
- Analyze forest management options including expected management inputs, expected resource outputs (including determination of allowable harvest levels for different resources), and distribution of costs and benefits

Community forest-use regulations
Six villages, working with the Non-Timber Forest Products (NTFP) Project in Ratanakiri province, developed draft regulations for forest protection in Poey Commune, O Chum District of the Province. These draft regulations prohibit burning the forest; hunting elephant, tiger, and bear; using firearms and exploitation of minerals inside the protected forest. The draft regulations permit collection of NTFP’s, in accordance with regulations of the forestry association, government laws and environmental sustainability.
• Discuss and analyze forest management options with the community, select preferred management alternatives
• Prepare a Community Forest Management Plan including use regulations, allowable harvest levels for different resources, and benefit sharing guidelines
• If a Village Forest Committee/Community Forestry Association has been formed, develop through discussion appropriate bylaws and roles of key individuals
• Discuss and verify the Community Forest Management Plan and the VFC/CFA bylaws with the community
• Submit the Community Forest Management Plan and VFC/CFA bylaws to relevant authorities
Details on methods and procedures for fulfilling tasks identified in the steps are provided in following sections of the Guidelines and in appendices.

Figure 5.3: Summary of Steps in Provincial and Local Level Planning for Community Forestry

<table>
<thead>
<tr>
<th>Step</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparation</strong></td>
<td>• establish and train facilitation team</td>
</tr>
<tr>
<td></td>
<td>• collect and review existing information: village &amp; forest</td>
</tr>
<tr>
<td></td>
<td>• preliminary contact and plan with target village(s)</td>
</tr>
<tr>
<td><strong>Local Orientation</strong></td>
<td>• introductions and clarification of objectives and roles</td>
</tr>
<tr>
<td></td>
<td>• introduce idea, policy, scope of community forestry</td>
</tr>
<tr>
<td></td>
<td>• initial basic data collection about the community, local dependence</td>
</tr>
<tr>
<td></td>
<td>• on forests, identification of stakeholders</td>
</tr>
<tr>
<td><strong>Community organization</strong></td>
<td>• discuss interest in community forestry with village(s)</td>
</tr>
<tr>
<td></td>
<td>• introduce community forestry planning program</td>
</tr>
<tr>
<td></td>
<td>• plan for further steps</td>
</tr>
<tr>
<td><strong>Information collection</strong></td>
<td>• assessment of community, forest resource use/dependency, tenure,</td>
</tr>
<tr>
<td></td>
<td>• inventory, and indigenous forest management</td>
</tr>
<tr>
<td></td>
<td>• identify and analyze overlapping claims</td>
</tr>
<tr>
<td></td>
<td>• discuss results with village(s); plan for further steps</td>
</tr>
<tr>
<td><strong>Formation of VFC / CFA</strong></td>
<td>• establish initial village organization(s) to conduct planning</td>
</tr>
<tr>
<td></td>
<td>• determine village(s) preference regarding establishment of a CF</td>
</tr>
<tr>
<td></td>
<td>• organize VFC/CFA, if appropriate</td>
</tr>
<tr>
<td></td>
<td>• plan for further steps</td>
</tr>
<tr>
<td><strong>Designation of Community Forest</strong></td>
<td>• participatory mapping and boundary demarcation of CF area</td>
</tr>
<tr>
<td></td>
<td>• prepare application for Community Forest</td>
</tr>
<tr>
<td></td>
<td>• discuss/verify application with the community</td>
</tr>
<tr>
<td></td>
<td>• submit the application to appropriate authorities</td>
</tr>
<tr>
<td></td>
<td>• upon designation of the Community Forest, plan for further steps</td>
</tr>
<tr>
<td><strong>Community forest management planning</strong></td>
<td>• review community and forest use/dependency assessments, identify</td>
</tr>
<tr>
<td></td>
<td>• stakeholders, identify issues and CF objectives</td>
</tr>
<tr>
<td></td>
<td>• describe the forest resource</td>
</tr>
<tr>
<td></td>
<td>• analyze forest management options</td>
</tr>
<tr>
<td></td>
<td>• select preferred management alternatives</td>
</tr>
<tr>
<td></td>
<td>• if a VFC or CFA exists, develop roles for key individuals and app-</td>
</tr>
<tr>
<td></td>
<td>• propriate bylaws</td>
</tr>
<tr>
<td></td>
<td>• prepare a Management Plan and VFC/CFA bylaws</td>
</tr>
<tr>
<td></td>
<td>• verify the Management Plan and VFC/CFA bylaws with the community</td>
</tr>
<tr>
<td></td>
<td>• submit the Management Plan and bylaws to relevant authorities</td>
</tr>
</tbody>
</table>
Annex III:

Training of Facilitators in Participatory Land-Use Planning in Cambodia

Trainers

In March 2002 a 2-week course "Training of Trainers in PLUP" was given at the General Department of Land Management and Urban Planning. A total number of 15 trainers from different departments like Forestry, Fishery, and Environment from various provinces attended this course. These trainers have thus improved their facilitation and training skills and are highly capable to introduce provincial and district government as well as NGO staff to PLUP and to train PLUP facilitators coming from theses institutions.

Trainees

The facilitators to be trained should have some kind of education and working experience on the operational level in the field of natural resources, e.g. forestry, agriculture, fishery, environment, land management, or rural development.

PLUP emphasizes the participation of all villagers and commune members. Since it is much easier for a woman then for a man to approach the female rural population, the group of trainees should also include female facilitators.

Training Methods and Content

General Methods and time frame

The course will be held in Khmer. The trainers are working as a team with a multidisciplinary background. Hence they are able to adapt the size of the training team and the duration and intensity of the training modules (cp. 2.2) according to the number of trainees and their special local requirements regarding to their duty as facilitators.

The training will be based on the PLUP manual and a curriculum of 14 modules that are described in the part 2.2. The PLUP manual will be handed out in Khmer language to each participant at the beginning of the course and will provide a guiding document for implementation of PLUP by the facilitators after the training. The teaching methods include short lectures, visualization, brainstorming in small groups and role-play exercises, discussions, and field practice. The training consists

The training course is designed for a period of 10 days (ca. 40 sessions), of which 1-3 days would be used for fieldwork.

The training modules

In the following table the 14 modules are listed, their major contents (learning goals) are briefly described, and maximum estimate time requirements are stated. Participants will be introduced stepwise to activities and methods and will learn how to implement and to apply them.
<table>
<thead>
<tr>
<th>Module No.</th>
<th>Topic</th>
<th>Content</th>
<th>Time Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction into PLUP</td>
<td>Clarification of training objectives and time schedule; definition and purpose of PLUP and its relation to community forestry; community-based natural resource management; implementation process</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>2</td>
<td>Legal and Institutional Aspects</td>
<td>Stakeholders; legal and political issues; land tenure and categories; institutions.</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>3</td>
<td>Facilitation Skills</td>
<td>Communication; listening; conflicts; monitoring; participatory and conventional approaches</td>
<td>2-3 days (8-12 sessions)</td>
</tr>
<tr>
<td>4</td>
<td>How to get started</td>
<td>Capacity building of PLUP facilitation teams; selection of pilot areas; required material; state land and concession areas; stakeholder analysis; meetings with district authorities and commune chiefs</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>5</td>
<td>Situation analysis</td>
<td>Roles and tasks among PLUP team members; contacts with target villages; information needs and PRA tools for socioeconomic, institutional, and natural resources analysis; land use conflicts; feedback sessions.</td>
<td>2 days (8 sessions)</td>
</tr>
<tr>
<td>6</td>
<td>Mapping of Present Land Use</td>
<td>Transect walking; village boundary demarcation; use of maps, aerial photographs, satellite images, and GPS; 3-d models; present land use map.</td>
<td>1 day (4 sessions)</td>
</tr>
<tr>
<td>7</td>
<td>Options for Land Use Change and Future Land Use</td>
<td>Identification of units requiring change and facilitation discussion by villagers on future changes; role conflicts of PLUP team; evaluation of options and technical suitability; preparing future land use maps</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>8</td>
<td>Village NRM Committee</td>
<td>Creation and role of a village NRM committee; gender issues; elections of the committee; NRM sub-committee under the Commune Council.</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>9</td>
<td>Elaboration of village regulations</td>
<td>Introduction of the concept of village regulation to villagers; facilitation of drafting process; fees and fines; final draft, official endorsement and approval procedures; incorporation of changes</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>10</td>
<td>Activity Planning, Implementation and Links with Institutions</td>
<td>NRM activity plan; implementation of land use changes; links with institutions of other sectors (e.g. health services, water supply)</td>
<td>1.5 hours (1 session)</td>
</tr>
<tr>
<td>11</td>
<td>Communal Management Plans</td>
<td>Participatory Forest or Fish Inventory; Preparation of Communal management plans</td>
<td>3 hours (2 sessions)</td>
</tr>
<tr>
<td>12</td>
<td>Conflict resolution</td>
<td>Types and scopes of conflicts and resolution mechanisms</td>
<td>1.5 hours (1 session)</td>
</tr>
<tr>
<td>13</td>
<td>Monitoring and Evaluation in PLUP</td>
<td>Types and techniques of M&amp;E; responsibilities; timing of M&amp;E</td>
<td>1.5 hours (1 session)</td>
</tr>
<tr>
<td>14</td>
<td>PLUP under Special Conditions</td>
<td>PLUP in ethnic minority areas, national parks, protected areas, fishery domains, and forest concession areas</td>
<td>3 hours (2 sessions)</td>
</tr>
</tbody>
</table>
Lao PDR

Annex I: Watershed Classification in Laos
Annex II: Hydro-power development status in Laos
Annex III: Watershed Management Process
Annex IV: Planning processes used by Nam Ngum Watershed Management Project (MAF/ADB)
Annex V: Course organized by MAF, NUOL, InWent, and Danida
Annex VI: Development fund raising mentioned in the laws
Annex VII: References
Annex I:

Figure 1 Watershed classification in Laos
Annex II:

Table 2. Hydro-power development status in Laos

<table>
<thead>
<tr>
<th>Project name</th>
<th>Capacity (MW)</th>
<th>Current status</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Theun-Hinboun</td>
<td>210</td>
<td>Agreement on buying energy signed/fiscal year</td>
<td>Fiscal year 10/1996</td>
</tr>
<tr>
<td>2 Houay Hoh</td>
<td>150</td>
<td>Signed electricity price agreement</td>
<td>Price agreement 11/1995</td>
</tr>
<tr>
<td>3 Xepian/Xenamnoi</td>
<td>444</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 07/1995</td>
</tr>
<tr>
<td>4 Nam Ngum 3</td>
<td>440</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 10/1995</td>
</tr>
<tr>
<td>5 Nam Ngum 2</td>
<td>615</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 08/1995</td>
</tr>
<tr>
<td>6 Nam theun 2</td>
<td>681</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Price agreement 03/1995</td>
</tr>
<tr>
<td>7 Xe Khaman 1</td>
<td>468</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Pre-feasibility study 02/1995</td>
</tr>
<tr>
<td>8 Nam Lik</td>
<td>100</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 03/1995</td>
</tr>
<tr>
<td>9 Nam Theun 3</td>
<td>237</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 07/1995</td>
</tr>
<tr>
<td>10 Nam Theun 1</td>
<td>540</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 10/1995</td>
</tr>
<tr>
<td>11 Nam Ou</td>
<td>600</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Pre-feasibility study 08/1995</td>
</tr>
<tr>
<td>12 Nam Ngum 5</td>
<td>90</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Pre-feasibility study 01/1995</td>
</tr>
<tr>
<td>13 Xe Khaman 1+2</td>
<td>100</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Pre-feasibility study 04/1995</td>
</tr>
<tr>
<td>14 Nam Gniep 2+3</td>
<td>565</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 03/1995</td>
</tr>
<tr>
<td>15 Nam Xuaeng 2</td>
<td>190</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 03/1995</td>
</tr>
<tr>
<td>16 Nam Tha 1</td>
<td>230</td>
<td>Signed MOU, submitted feasibility study</td>
<td>Feasibility study 10/1995</td>
</tr>
<tr>
<td>17 Nam Ngum 1 (with Nam Xong diversion 1995)</td>
<td>150</td>
<td>In operation</td>
<td>Export electricity since 1971</td>
</tr>
<tr>
<td>18 Nam Dong</td>
<td>1</td>
<td>In operation</td>
<td></td>
</tr>
<tr>
<td>19 Nam Phat</td>
<td>1.6</td>
<td>In operation</td>
<td></td>
</tr>
<tr>
<td>20 Xe Labam</td>
<td>5</td>
<td>In operation</td>
<td></td>
</tr>
<tr>
<td>21 Paksong</td>
<td>0.04</td>
<td>In operation</td>
<td></td>
</tr>
<tr>
<td>22 Xe Set</td>
<td>45</td>
<td>In operation</td>
<td>Export electricity since 1991</td>
</tr>
</tbody>
</table>

Source: Mekong River Commission (1996)
Annex III:

Integrated Watershed Management Process

1. Watershed Identification and Analysis

Watershed Analysis
Develop Watershed Profile and Problem Diagnosis

Secondary Data Sources
- MAF Technical Departments: NAFRI, DOA, DOI, DOLF, NAFES, etc.
- Lao agencies: STEA/WRCC, MIH, MCTPC etc.
- Bilateral Projects in Lao PDR
- Mekong River Commission
- Regional Institutions: AIT, RECOFTC, WOCAT, ICIMOD, etc.
- UN: FAO, UNDP, etc.
- CGIAR: ICRAF, ILRI, CIFOR

2. IWM Strategy and Plan

The Integrated Watershed Management plan provides the priorities and directions for future natural resources management activities for the area. The IWM Plan shall be regularly updated.

3. Sub-sector Implementation Plan

Action (work) plans are developed for the priority sub-sectors based on directions given in the IWM Plan and specific links to other sectors.

4. Implementation

Implementation of sub-components by village, district, province, central level or donors.

5. Monitoring and Evaluation

- Monitoring & Evaluation according to identified indicators
- Output of M&E should feedback to the Coordinating Unit
- Assess training needs and HRD

Develop sub-sector action-plans based on plan recommendations

Implementation of sub-component(s)

Source: MAF/ Danida Capacity Building Project
Annex IV:

**STRATEGY**
- Reforestation
- Farming systems change (small scale irrigation, HYV, crop diversification, livestock, fisheries, handicraft, etc.)
- Community management
- Market development
- Forest classification and enforcement

**WATERSHED ANALYSIS**
1. Erosion risk/analysis
2. Forest cover/analysis
3. Land use/analysis
4. Socio-economic data/population projection
5. Biodiversity data/analysis
6. Fisheries survey/analysis
7. Farming systems data/analysis
8. Natural resource (land, water, forest) valuation

**PRA**
1. Village resource mapping
2. Village needs and problems
3. Village proposed solution

**FORMULATION/ANALYSIS OF ALTERNATIVE**
- Economic, environmental and social costs/benefits
- Economic development with sustainable environmental

**STRATEGIC DEVELOPMENT PLAN**
1. Environmental enhancement
2. Agriculture and rural development
3. Poverty alleviation/household income
4. Sustainable natural resource management & hydropower development
5. Work plans, budgets and management responsibilities and institutional strengthening

**HYDROPOWER DEVELOPMENT REVIEW**
1. Environmental/social costs
2. Economic benefits

**Other agencies/level**
1. STEA/WRCC
2. MIH/DOH&EDL
3. SPC. PAFO & DAFO

Figure 3 Planning processes used by Nam Ngum Watershed Management Project (MAF/ADB)
Annex V:

Course organized by MAF, NUOL, InWent, and Danida

<table>
<thead>
<tr>
<th>Courses</th>
<th>Date</th>
<th>No. of Participants</th>
<th>Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept on Integrated Watershed management</td>
<td>November 2000</td>
<td>50</td>
<td>MAF/Danida/NUOL</td>
</tr>
<tr>
<td>Integrated Watershed Management Planning</td>
<td>December 2002</td>
<td>25</td>
<td>MAF/NUOL/InWent</td>
</tr>
</tbody>
</table>
Annex VI:

Development fund raising mentioned in the laws

Environment Law

Chapter V The Environment Protection Fund

Article 30. Environment Fund
The government supports the establishment of an Environment Protection Fund to support activities in the fields of research, preservation, mitigation of impacts to and restoration of the environment, including the protection and conservation of natural resources. For the establishment and management of the Environment Protection Fund, separate regulations shall be issued.

Article 31. Source of Funds
The Environmental Protection Fund shall be funded from the following sources:
1. Government budget;
2. Development projects and related activities;
3. Contributions from international and local agencies;
4. Contributions from the private sector and individuals;
5. Interest and profit accruing from the fund.

Article 32. Use of Funds
The Environmental Protection Fund shall be used for the following activities:
1. Mitigation of urgent and pressing environmental issues;
2. Projects related to scientific and technological research on environmental protection, management, monitoring and the implementation of other environmental protection legislation;
3. The promotion of environmental education, training and awareness building;
4. Supporting campaigns for environmental protection such as World Environment Day, National Arbor day, and the National Fish Release Day;
5. Management of the fund.

Forest law

Article 47. Forestry and Forestry Resources Development Fund
To ensure that protection of forestland and forestry resources if conducted effectively, the state has created the forestry and forestry resources development fund.

Forestry and forestry resources development funds are derived from the state budget, individuals, collections, social organizations, international organizations and others.

The Forestry and Forestry Resources Development Fund is to be used particularly for protecting protected forest and plantation forest, for forest rehabilitation to protect watersheds and the environment, for protection and development of aquatic animals and wildlife and for information and training on policy, regulations, laws and forestry techniques.

For the organization, management and activities of The Forestry and Forestry Resources Development Fund, specific regulations shall be issued.
**Water and Water Resource Law**

Article 24. Funds Contributed to the Preservation of the Origins of Water and Water Resources. Those conducting development activities and who use water and water resources must contribute funds for the maintenance of the origins of water and water sources.
Annex VII:

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Nam Ngum (ADB) Inception report, final report from the project
Nam Ngum (NAWACOP) GTZ, Inception report, concept paper on Watershed management, Evaluation reports

Bounsouk. 2002. MRC-WQM Network Review Lao PDR. Consultancy Report For MRC


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Phanvilay, Khamla Hirsch, Philip. (1998); Community-based natural resource management and watershed resource conflict study from Nam Ngum, Lao PDR. CBNRM: A case study from Nam Ngum, Lao PDR.

Pravongviengkham, Phouang Parisak. (Undated); An area-Based Livelihood Systems Approach to Rural Development in Lao PDR Executive summary.

Sharma, Prem N. (1992); Community Participation for Forest Watershed Management in Laos.
Thailand

Annex I: Evolution of RTG’s Approaches to Watershed Management

Annex II: Policy and legal framework related to watershed management activities in Thailand based on the NESDP goals and strategies from 1961 to present

Annex III: Watershed Class Characteristics and Recommended Land –use Practices approved by the Cabinet

Annex IV: Bibliography
Annex I:

Evolution of RTG’s Approaches to Watershed Management

<table>
<thead>
<tr>
<th>Period</th>
<th>Watershed Management Approach</th>
<th>Key Actor (S)</th>
<th>Implemented Area (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953-1970</td>
<td>Reforestation of “abandoned” shifting cultivation areas relocation of hill-tribe communities and diversification of rural economics</td>
<td>RFD, office of Narcotic Control, Border Police, Royal Thai Army and other MOAC departments</td>
<td>Mainly in the North and some part of the North-East</td>
</tr>
<tr>
<td>1970s-1980</td>
<td>Integrated land use planning in single administrative units but still emphasizing on forest protection, reforestation, fire protection, introduced permanent agricultural system to replace shifting cultivation practices on mountainous watershed</td>
<td>RFD, “Mae Sa Integrated Watershed and Forest Land-Use Project” with the assistance from FAO/UNDP experts.</td>
<td>Mae Sa Watershed a tributary of Mae Ping River basin, Chiang Mai Northern</td>
</tr>
<tr>
<td>1980s-1990</td>
<td>Integrated watershed management with community participation focused on forest protection, reforestation, fire protection, soil and water conservation, small reservoir for irrigation and extension of “new” agricultural crops</td>
<td>Inter-government agencies under Governor/Provincial Cooperation/Advisor “Mae Chaem Watershed Management Project” and Phu Wiang Watershed Project</td>
<td>Mae Chaem Watershed tributary of Mae Ping and Phu Wiang watershed of Nam Chi River basin in the Northeast Khon Kaen Province.</td>
</tr>
<tr>
<td>1990s-2000s</td>
<td>Watershed Management using communities participation and upstream-downstream impact relationship</td>
<td>RID under UNDP support</td>
<td></td>
</tr>
<tr>
<td>1996-2003</td>
<td>Ecosystem rehabilitation and improve livelihood of local villagers based on strategy of people’s participation in planning and implementation</td>
<td>RFD, watershed Division; partly funded under technical coop. from DANIDA (DanisaGov.)</td>
<td>Upper Nan Watershed covers 6 sub.WS, 45 villagers, 4,490 households, different ethnic groups.</td>
</tr>
<tr>
<td>2004-present (2004)</td>
<td>Participatory watershed management for poverty reduction.</td>
<td>Ministry of Natural Resources and Environment (MNRE) using grant from</td>
<td>Ping River basin Chiang Mai Northern; 34,659 sq.km.</td>
</tr>
<tr>
<td>Approach: micro-watershed management, enchanting stakeholders’ capacity in planning, implementation, monitoring, strengthening regulatory and incentive</td>
<td>ASEM Trust Fund in cooperation with the World Bank</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex II:

Policy and legal framework related to watershed management activities in Thailand based on the NESDP goals and strategies from 1961 to present

<table>
<thead>
<tr>
<th>NESDP No (Period)</th>
<th>Main Goal &amp; Statement related to watershed resources policy and legal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st (1961-1966)</td>
<td>Goal: Infrastructure, irrigation, electricity and communication systems development &lt;br&gt; WSM: - 50% of the country area proposed for the forest land and another 50% for agriculture and others</td>
</tr>
<tr>
<td>3rd NESDP (1972-1976)</td>
<td>Goal: Promoting Export. Import System Improvement, Distributing Income to Rural Area and Maintaining Agricultural product price. &lt;br&gt; WSM: Continuing land-use classification farmers’ land tenure, land ownership and land stability be promoted</td>
</tr>
<tr>
<td>4th NESDP (1978-1981)</td>
<td>Goal: Expanding Industrial and Agricultural products, Accelerating Natural Resources Restoration/Rehabilitation &lt;br&gt; WSM: &lt;br&gt; - extension of agricultural land proposed to limit at less than 500,000 rai/year &lt;br&gt; - land reform, land development and forest conservation/restoration/rehabilitation performed &lt;br&gt; - provide some disturbed forest to the land less people.</td>
</tr>
<tr>
<td>6th NESDP (1987-1991)</td>
<td>Goal: Developing skill labors, Natural Resources and Environment Science and Technology, Regional Area Modernization. &lt;br&gt; WSM: &lt;br&gt; - land-use planning and land development promoting, &lt;br&gt; - improving land-use information system, &lt;br&gt; - accelerating land allocation and land ownerships</td>
</tr>
<tr>
<td>7th NESDP (1992-1996)</td>
<td>Goal: Trading Economic development, income distribution to rural communities, accelerating quality of life improving and promoting semi-government and government sectors. &lt;br&gt; Natural Resources: &lt;br&gt; - 30 million rai land reform within 7 yrs, allow 4 million rai/yr land right with database development &lt;br&gt; - preserve/conserve at least 25% of country area as forested area &lt;br&gt; - water resources development using 25 main river basin as planning/implementing units.</td>
</tr>
</tbody>
</table>
### Annex II: Cont.

<table>
<thead>
<tr>
<th>NESDP No (Period)</th>
<th>Main Goal Statement related to watershed resources policy and legal issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fundamental strategies:</strong></td>
<td></td>
</tr>
<tr>
<td>- support people’s participation (PP) and cooperating with governmental organisations (GO) in nature conservation</td>
<td></td>
</tr>
<tr>
<td>- control/supervise protected area for implementation by promoting stakeholders awareness</td>
<td></td>
</tr>
<tr>
<td>- reduce conflict in natural resource utilization</td>
<td></td>
</tr>
<tr>
<td>- promote incentive and pricing systems for natural resources</td>
<td></td>
</tr>
<tr>
<td>- Natural resources database development for integrated management proposed.</td>
<td></td>
</tr>
<tr>
<td><strong>8th: (2540-2544) (1997-2001)</strong></td>
<td>Goal: Improve quality of life, strengthen human resources and civil society developed for more practical management. Natural Resources:</td>
</tr>
<tr>
<td>- Reforestation/rehabilitation of resources and environment by improving exhausted land resources, with practical soil and water conservation measured and alternative cropping systems, reducing agricultural chemical pollution.</td>
<td></td>
</tr>
<tr>
<td>- Promoting PP and community participation (CP) by strengthening capacity of GO resources persons to work and live with local communities, improve public relation techniques to build awareness of natural resources; information network, increasing opportunity for full PP.</td>
<td></td>
</tr>
<tr>
<td>- natural resources management and administration approached using river basin system as planning and implementing units with policy integration and support for natural disaster prevention by zoning risk areas and also implementing a warning system.</td>
<td></td>
</tr>
<tr>
<td>- Transfer management mechanisms to local organizations and strengthen technical, legal and managerial capability under the supervision of national organization) using integration and sustainable development approaches.</td>
<td></td>
</tr>
<tr>
<td>- increasing efficiency in Law enforcement, control and monitoring, building awareness realization in improving quality of life by preventing degradation of natural resources and environment.</td>
<td></td>
</tr>
<tr>
<td>- Database development and utilization for maintaining natural ecosystem</td>
<td></td>
</tr>
<tr>
<td>- promoting efficiency in using water sustainably and equitably.</td>
<td></td>
</tr>
</tbody>
</table>
### Annex III:

#### Watershed Class Characteristics and Recommended Land-use Practices approved by the Cabinet

<table>
<thead>
<tr>
<th>WS Class (WSC)</th>
<th>Characteristic</th>
<th>Major Land-uses Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WSC1</strong> (divided into 2 subclasses)</td>
<td>Protection forest and water sources at higher altitude and steep slope,</td>
<td>• Should remain under permanent forest cover</td>
</tr>
<tr>
<td><strong>1A</strong></td>
<td>WSC1 with undisturbed primary forest cover</td>
<td>• head-water source areas must be kept permanently forested</td>
</tr>
<tr>
<td><strong>1B</strong></td>
<td>Similar to WSC 1A but some areas cleared for agricultural use or occupied by villages.</td>
<td>• Require special soil and water conservation (SWC) measures, replanting of forest or maintainance as permanent agroforestry, exemption may be given to projects important to the national economy or security although an EIA is required.</td>
</tr>
<tr>
<td><strong>WSC2</strong></td>
<td>Commercial forests at higher elevations with steep slopes but landforms less erodible than WSC1, considered as secondary headwater areas</td>
<td>• logging and mining, use for grazing or certain crops may be allowed with appropriate SWC measures, • reforestation program must be conducted by agencies concerned</td>
</tr>
<tr>
<td><strong>WSC3</strong></td>
<td>Uplands with steep slopes and less erosive landforms suitable for fruit tree plantation</td>
<td>• may be used for commercial forest, mining, grazing, • fruit-tree, orchard, economic planning, cash crop are recommended for areas with soil depth &gt;50 cm but need appropriate SWC</td>
</tr>
<tr>
<td><strong>WSC4</strong></td>
<td>Gentle sloping lands (6-25%) suitable for upland farming</td>
<td>• row crops, fruit trees and grazing with moderate need for SWC measures, • forestry, mining and other land-use activities are allowed with close supervision of agencies concerned</td>
</tr>
<tr>
<td><strong>WSC5</strong></td>
<td>Gentle to flat lands used for low land farming</td>
<td>• paddy fields or other agricultural uses with few restrictions, • areas with soil depth &lt;90 cm recommended for agronomic crops, private woodlots, fruit trees and ranges or recreational purpose, • industrial development should avoided lands with high agricultural potential</td>
</tr>
</tbody>
</table>

**Notes:** The watershed classification and land-use practice resolution have been implemented since 1985 following approval of the Cabinet in the following years:
- Ping and Wang Watershed: 28 May 1985
- Yom and Nan Watershed: 21 October 1986
- All watersheds in Southern region: 7 November 1984
- All watersheds in Eastern region: 19 November 1991
- All watersheds in Western-Central and Pasak watershed, and these in Northern and Northern-Eastern Border (to Mekong basin) 21 February 1995
Annex IV:

Bibliography


Vietnam

Figure 1: Ministry of Agriculture and Rural Development in relation to watershed area management.

Figure 2: Management of the Ministry of Natural Resource and Environment in relation to watershed areas.

Figure 3: River Basin Management of Vietnam.

Figure 4: Planning System relating to Watershed Area Management in Vietnam.

Figure 5: Review of planning methods of some projects related to watershed protection forests.

Figure 6: Participatory Land Use Planning and Land Allocation Process (Rural Development Project in Son La – Lai Chau).

Figure 7: Organization Chart of LUP/LA in Son La Province.

Figure 8: Decision Making Process for LUP (Song Da Social Forestry Development Project).

Figure 09: Planning experience relating to river basin management of national and overseas projects.

Figure 10: Agroforestry System in Vietnam.

Figure 11: Community based forestry model.
Figure 1: Ministry of Agriculture and Rural Development in relation to watershed area management

Ministry of Agriculture and Rural Development
{Macro Management}

Department of Dyke Management and Flood, Storm Protection

Department of Irrigation

Department of Agriculture and Forestry Extension

Department of Forest Protection

Department of Forestry

Management Agreement

Dike, flood protection method

Irrigation water

Agriculture and forestry development except forest plantation

Forest management and protection

Office for Managing River Basin Planning

Forest Plantation and Development

Agriculture – Forestry – Irrigation

Department of Agriculture and Rural Development

River Basin

Watershed Areas

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**Figure 2: Management of the Ministry of Natural Resource and Environment in relation to watershed areas**

**Ministry of Natural Resource and Environment**

{Macro Management}

- Department of Environment Protection
- Department of water management

State management on land – water – environment – hydrometeorology

- State management on environment protection
- State management on water

- National Committee on Water (Office based in Department of Water)

Natural resources: land, water, mineral, environment, hydrometeorology

Department of Natural Resource and Environment
Figure 3: River Basin Management of Vietnam

Ministry of Agriculture and Rural Development

Ministry of Industry

Ministry of Communication and Transport

Ministry of Finance

National Committee on Water Resource

Ministry of Defense

Ministry of Natural Resource and Environment

Ministry of Planning and Investment

Ministry of Industry

Ministry of Planning and Investment

Ministry of Science and Technology

Ministry of Health

Government

Watershed Areas

Department of Water Management

Department of Natural Resource and Environment

Ministry of Science and Technology

Ministry of Health

Ministry of Planning and Investment

National Committee on Water Resource

Ministry of Industry

Ministry of Planning and Investment

Ministry of Science and Technology

Ministry of Health
Figure 4: Planning System relating to Watershed Area Management in Vietnam

- **Overall Planning** (socio-economic development planning)
  - **Land Use Planning**
  - **Sectoral Planning**
    - Water Use Planning
    - Forestry Planning
    - Irrigation Planning
    - Other Sector Planning
### Figure 5: Review of planning methods of some projects related to watershed protection forests management in Vietnam

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Contents</th>
<th>Steps</th>
<th>Applied methods</th>
<th>Results</th>
</tr>
</thead>
</table>
| 1 | Forestry land allocation and land use planning in Quang Ninh Province (Italian project) | - Information and data collection  
- Development of current land use map  
- Potentials (land resource/area)  
- Preparation of land use plan (draft) and submission to the District People’s Committee | Participatory Land Allocation and Land use Planning, involving participation of local people at all stages in the process. | Maps of current and planned land use at the commune level; tools obtained or used during preparation of these maps |
| 2 | Land use planning of SIDA | - Establishment of land use planning group of 10-12 people  
- 2 days classroom training and 2 days training in the field for the group  
- The group collects information and data  
- Implementation of land use planning at the village level  
- Village meeting to approve the land use plan  
- Preparation of a final report on the village land use plan | Participatory land use planning at the village level | Nearly 200 villages have undergone land use planning and each has a forest management plan. |
<p>| 3 | Land use planning in Song Da Social Forestry Project | Together with local people, the project develops practices for sustainable management of natural resources (forests, land and water) to improve local people’s livelihoods and protection forest management in Song Da watershed. | Participatoty land use planning | Procedures for forest land allocation and land use planning for communes. Development of village extension systems. |
| 4 | FAO Land use | Allocate long term management rights | Participatory land use | Commune development |</p>
<table>
<thead>
<tr>
<th>and watershed management planning project in Hoanh Bo</th>
<th>allocation and improvement of land use efficiency in protection areas</th>
<th>households. Households can use a part of the allocated land for fruit trees or agroforestry - Review the previous forestry land allocation - Participatory land use planning - Identify the boundary and allocate the land using GPS - Develop commune regulations for forest protection and management - Provide technical supports for forest management - Analyse necessary cost for forestry land allocation - Independent monitoring and evaluation to assess socio-economic and environmental changes brought about afforesting land</th>
<th>planning plan (CDP) and village development plan (CDP) to cooperate with the Management Board of Yen Lap protection forest in managing the protected areas.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Watershed management of DSE</td>
<td>Sustainable management of forests, land and water resources</td>
<td>The final plan on integrated watershed management: - Pay attention to the contraints during planning process - Develop criteria for decision making - Develop a list of focal points in management for making demonstration models - Final test - Document the test results and propose 1 or more plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community based integrated watershed management and land use planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Development of training documents on &quot;Integrated watershed management&quot; for staff who have college degree working in government agencies, planning organisations and universities.</td>
</tr>
</tbody>
</table>
**Figure 6: Participatory Land Use Planning and Land Allocation Process**  
*(Rural Development Project in Son La – Lai Chau)*

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **Step 1: Preparation** | Act 1: Preparation  
Act 2: Collection and analysis of secondary data and maps and collection of additional data at commune and village levels (if needed)  
Act 3: Review and analyse socio-economic development plans of the province and district, land use planning of the district and forest protection management unit (if there is any)  
Act 4: Training  
Act 5: 1st village meeting  
Act 6: Preparation of materials, means and tools  
Act 7: Preparation of finance  
Act 8: Planning for PLUP and FLA implementation |
| **Step 2: Assessment of current land use and identifying needs related to forestry land allocation and use** | Act 9: Conducting PRA *(Participatory Rural Appraisal)* and organizing 2nd village meeting  
Act 10: Participatory appraisal of forest resources |
| **Step 3: Land and forest use planning and preparation for land allocation** | Case 1: For communes where land use plans already exists  
Act 11: Review and adjust 6 types of land and 3 types of forest and forest areas for protection purposes, options for land and forest uses...as steps 11 to 17.  
Case 2: For communes where land use plans are not available  
Act 11: Drafting plans for 6 types of land  
Act 12: Drafting plans for 3 types of forest and classification of forest areas for protection purposes  
Act 13: Drafting plan for forestry land allocation in each village  
Act 14: Drafting plan for forestry land allocation for each village and the whole commune  
Act 15: 3rd village meeting: propose and discuss the land and forest use planning and plan for land allocation of the village  
Act 16: Synthesis of PLUP and FLA options for the commune  
Act 17: Commune meeting on PLUP and FLA plans  
Act 18: Submission and and approval of commune PLUP and FLA plans |
| **Step 4: Implementation of forest and forest land allocation** | Act 19: Implementation of FLA in the field |
| **Step 5: Developing cadastral dossiers** | Act 20: Developing and managing cadastral dossiers |
| **Step 6: Appraisal, submitting and granting land use right certificates** | Act 21: Appraising  
Act 22: Granting land use right certificates |
Figure 7: Organization Chart of LUP/LA in Son La Province

Provincial LUP/LA Steering Committee

- Land Admin. Dept.
- Forest Protection Sub-Dept.
- DARD

District LUP/LA Steering Committee

- Cadastral Unit
- Forest Protection Unit
- DARD
- Planning Division
- Financial Division
- Justice Division

Working Group

Land Registration and LUP/LA implementation Council of Commune

- Cadastral Staff
- Forest Protection Staff
- Agriculture Staff
- People’s Council Rep.
- Women Union Rep.
- Statistic Staff
- Village Headmen
Figure 8: Decision Making Process for LUP

( Song Da Social Forestry Development Project)

Commune has already LUP

LUP assessment

Commune has not yet LUP

Not Appropriate

Appropriate

Adjustment of LUP

Make new LU plan
### Figure 9: Planning experience relating to river basin management of national and oversea projects

<table>
<thead>
<tr>
<th>No.</th>
<th>Project</th>
<th>Stakeholders</th>
<th>River basin management elements in planning</th>
<th>Planning – Implementation – Evaluation</th>
<th>Multi-sector approach (Agriculture, Forestry, Irrigation,...)</th>
</tr>
</thead>
</table>
| 1   | 661 Program in Hoa Binh | - Provincial Department of Forestry  
- Protection Forest Management Board  
- Involving Communes | - Focus on forest trees, planting protection forest  
- Recover natural forest | Implement as provincial planning | Mainly relating to forestry elements |
| 2   | Song Da Social Forestry Project | - Son La DARD  
- Thai ethnic minority group  
- Partner is the project | - Bare hill and unused land relating to land protection  
- Land protection | Link elements of the progress: issue identification – planning – implementation | Mainly forestry and plantation through sloping land cultivation |
| 3   | Lai Chau EU Project | - DARD  
- 13 communes in the project area  
- Thai and Hmong ethnic groups | Forest and forest land (forestry component and other components: infrastructure, culture, education...) | Combine land use planning and forest land allocation to community | Multi-sector approach, agriculture and infrastructure |
| 4   | FAO Project in Hoanh Bo | - DARD  
- 8 communes of Dao, Tay, Kinh ethnic minority group  
- Yen Lap Lake Management Board | Protection Forest of Yen Lap Lake is natural forest | Develop project progress for 7 years | 5 sectors: forestry, plantation, fruit trees, infrastructure, credit |
| 5   | FAO/Italy Project in Quang Ninh | - DARD of the district  
- Community  
- Partner is the project | Participatory sloping land use | Forest land planning and allocation | Forestry and forest land allocation |
Figure 10: Agroforestry System in Vietnam

Agroforestry: long-term trees, plants and domestic animals

Agroforestry
- Forest, kaingin alternation cultivation
- Erosion protection band
- Wave protection band

Agroforestry
- See both in 2 periods: See agriculture cops, medical plants/trees

Agro-Silvo-Pastoral
- Combine forest animals and agriculture
  - Agro-silvo-pastoral
  - Grazing under the forest cover
  - Grass field with trees for woods

Household use trees
- Long-term industrial trees
  - Do business with fruit trees (fruit garden, forest garden)...

Fishery - Forestry
- Cajuput forest
  - fish - bee
  - Mangrove forest – Shrimp – Fish

Fishery - Forestry - Agriculture
- Cajuput forest
  - Rice
  - First 2 year plantation forest + Fish, Shrimp

Bee Keeping
- Eucalyptus – Bee
- Mangrove forest – Bee
- Cajuput forest – Bee
  - Fruit garden, forest garden, garden forest

Agri-Silvo-Pastoral + Aquaculture in large areas
- Land in high mountain
- Hill land and highland
- Alluvial soil
- Sulphate soil
- Mangrove land
- Sand and sand dune near sea

Specific Agroforestry Model in Vietnam
Figure 11: Community based forestry model

1. Participatory Technology Development (PTD)

PTD is a new approach to find successful innovations by combining together the local knowledge of farmers and the scientific knowledge of researchers. In this approach, extensionists facilitate the interaction between farmers and researchers. We therefore have a triangle - farmers, researchers and extensionists - cooperating to find new “things” that work in order to build the capacity of farmers to improve their livelihood.

2. Participatory watershed forest management project in Hoanh Bo district, Quang Ninh province:

The project applies a consolidated watershed forest management method at a high level that supports Hoanh Bo district authority in ten necessary areas to develop sustainable livelihoods for local people:

- Forest management focuses on forest land classification and allocation
- Forest protection and setting up forest protection and management regulations
- Cultivation of corn and new species of rice
- IPM for rice, peanut and soybean
- Gardening focuses on sloping land cultivating technology
- Husbandry development focuses on pig, buffalo and poultry as well as bees
- Veterinary service development through local farmer training
- Building and improving irrigation systems to help farmers cultivate 2 crops per year
- Irrigation system management to maintain irrigation works
- Credit and saving services help farmers in saving and borrowing money to help initiate small businesses and pay for unforeseen expense.
Abbreviations

Cambodia

AIFP Agriculture Irrigation and Forestry Program (MRC)
CAMCOFTT Cambodia Community Forestry Training Team
CBD Convention on Biological Diversity
CBNRM Community Based Natural Resource Management
CBTS Capacity Building for Sustainable Development in the Ton Le Sap Region
CCC Convention on Climate Change
CF Community Forestry
CFDO Community Fisheries Development Office
CITES Convention on International Trade in Endangered Species
CNMC Cambodian National Mekong Committee
CPAD Community Protected Areas Development
DANIDA Danish International Development Assistance
DED German Development Service
DNCP Department of Nature Conservation and Protection
FA Forestry Administration
FAO Food and Agriculture Organization
GEF Global Environmental Facility
GSCSD General Secretary of Council for Social Development
GTZ German Technical Cooperation
IFAD International Fund for Agricultural Development
InWEnt Capacity Building International (Germany)
LUP Land Use Planning
MAFF Ministry of Agriculture Forestry and Fisheries
MLMUPC Ministry Land Management, Urban Planning and Construction
MoE Ministry of Environment
MOEYS Ministry of Education, Youth and Sport
MOH Ministry of Health
MoI Department of Administration of Ministry Interior
MoP Ministry of Planning
MRC Mekong River Commission
MRD Ministry of Rural Development
MWRM Ministry Water Resources and Meteorology
MWVA Ministry of Women and Veterans Affair
NEAP National Environment Action Plan
NGO Non-Governmental Organization
NPRS National Poverty Reduction Strategy
NREAG Natural Resources and Environmental Advisory Group
PA Protected Areas
PED Provincial Environmental Department
PIU Project Implementation Units
PLUP Participatory Land Use Planning
PRDC Provincial Rural Development Committee
RCG Royal Government of Cambodia
SEILA Decentralization Support Programme of RGC
UNDP United Nations Development Program
WSM Watershed Management
WWF World Wide Fund for Nature
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ADB</td>
<td>Asia Development Bank</td>
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<tr>
<td>ASEM</td>
<td>Asia – Europe Meeting</td>
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<tr>
<td>CG</td>
<td>Community Group</td>
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<tr>
<td>CIDA</td>
<td>Canadian International Development Agency</td>
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<td>CMU</td>
<td>Chiang Mai University</td>
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<td>CNEM</td>
<td>Center for Natural Resource and Environmental Management</td>
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<tr>
<td>DANCED</td>
<td>Danish Cooperation for Environment and Development</td>
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<td>DLA</td>
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<td>DNP</td>
<td>Department of National Park, Wildlife and Plant</td>
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<td>DWR</td>
<td>Department of water Resources</td>
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<td>EIA</td>
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<td>FINNIDA</td>
<td>Finish International Development Agency</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<td>GPS</td>
<td>Global Positioning System</td>
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<td>GWP SEATAC</td>
<td>Global Water Partnership – Southeast Asia Technical Advisory Committee</td>
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<tr>
<td>ICRAF</td>
<td>International Center for Research in Agroforestry</td>
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<td>International Union Conservation of Nature</td>
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<td>LC</td>
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<td>PCO</td>
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<td>PMM</td>
<td>Participatory Micro-watershed Management</td>
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<td>PSG</td>
<td>Pollution Source Group</td>
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<td>PWMC</td>
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<td>Royal Irrigation Department</td>
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<tr>
<td>SWC</td>
<td>Soil Water Conservation</td>
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<td>The United Nations Fund for Drug Abuse Control</td>
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