

A Brief Review of
Upland Agricultural Development
in the context of
Livelihoods, Watersheds and Governance
for area-based development projects
in the Lao PDR

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Upland Agricultural Development

in the context of Livelihoods, Watersheds and Governance for area-based development projects in the Lao PDR

About this report...

Purpose and Scope. This report seeks to provide useful input into efforts by the International Fund for Agricultural Development (IFAD) as it seeks to refine its programmatic approach to rural development and rural poverty reduction in the Lao PDR, as part of its process of preparing a new 'country strategic opportunity paper'. The particular focus of this report is mandated to be in areas of upland agricultural development, under three major topics:

1. approach to upland agricultural development, land allocation and the focal site programme, stabilization of shifting cultivation, opium eradication and development of sustainable alternative livelihoods to the rural poor;
2. availability of agricultural technologies and processes for their further development, refinement and adaptation in IFAD project areas;
3. agricultural extension and dissemination support services and processes.

Given this mandate, it should be noted that this report does not include discussion of particular policies such as conservation of biodiversity in protected forest areas, broader general environmental policies, reference to specific activities in universities, or related activities in other sectors such as education or health. Moreover, there is also only minor reference to finance and micro-enterprise activities that could be, and have been, topics for separate reports in themselves.

Information and Data Sources. It is, of course, important to point out that this has been a very brief 'desk study' of materials available from a variety of sources, which included publications, official documents, reports, draft reports and documents, discussion papers, and so on. A list of most references reviewed for the report is presented in Appendix 1. The consulting co-authors at NAFRI were primary sources both of documents (of various types and stages of development), and of ideas, experience and insight. We have also benefited a great deal from frank discussions with various people who provided materials, often in draft or discussion note form, and who were willing to share insights from their experience in work related to upland development in the Lao PDR during recent years. In this regard, we would especially like to thank John Raintree, Charles Alton, Peter Jones, James Chamberlain, Pheng Souvanthong, Rod LeFroy, Keith Farney, Karl Goppert, and Karl Gerner. Unfortunately, several additional people with whom we had hoped to extend these discussions were traveling outside the country during the brief time available for gathering information for this report, as well as some with whom contact was precluded by other timing and logistic issues.

Report Structure. The structure of the report is in four sections. The first section summarizes evolution of major policies that are strongly directed toward influencing the direction and rate of change (development) in upland areas of the country, followed by a brief discussion of three major current strategic visions that are intended to guide further development, and then a discussion of roles of governance structures at provincial and district levels in implementing these policies and strategic visions. The second section presents a synthesis of how implementation of major policies and programs appear to have thus far been affecting key elements of household and community livelihoods in upland areas. The third section turns to examination of the government's emerging system for adaptive research to improve the availability of agricultural technologies, and the status of work needed to address priority technological needs in upland areas. The fourth and final section takes a look at implementation support services and processes for agricultural development, including the emerging extension system, efforts to link adaptive research with extension, and a few general issues for area-based development projects. Graphic images in this report are best viewed or printed in color.

Specific issues for consideration by IFAD or other area development projects, and suggested points for policy dialogue between projects and the Government of the Lao PDR are noted as they arise in the flow of the presentation of the report. They may also be found in a summary table attached as Appendix 2.

1 Approach to Upland Agricultural Development

Given the nature of land use patterns and practices in upland zones of the Lao PDR, and the livelihoods of people living in those zones, delineation of agricultural development – as distinct from forest and natural resource management – is not realistic or useful. Indeed, all of these components are closely intertwined in the government’s policies and strategic visions for development of upland zones. Thus, this section seeks to briefly summarize evolution of the fairly complex set of core policies and strategic visions relevant to upland development, and some of the experience that is helping inform their further refinement.

1.1 Emerging National Poverty Eradication Framework

The Government of the Lao PDR is finalizing plans for presentation to the donor community of its new framework for rural development, known as the National Poverty Eradication Programme (NPEP).¹ This program forms a central part of its ambitious strategy to achieve the goal of the Lao PDR leaving the ranks of least developed countries (LDC) by the year 2020. Efforts to develop this programme began in 2001 with the high-level government directive ‘Concerning the establishment of a plan for the eradication of poverty’², which articulated criteria for operationally defining poor households, villages, and districts, and mapped out a ‘rural development *cum* poverty eradication strategy’ promoting access to (1) agriculture and forest technology; (2) markets through road and information improvement; (3) social services; (4) human resource development; and (5) financial resources. The government emphasizes that an essential policy underpinning this instruction is that ‘grass roots levels should take initiatives in poverty alleviation (through development) in their own areas’.³ Accordingly, a substantial range of activities have been conducted to assess rural poverty in the Lao PDR, review previous experience in implementation of rural development policies and projects, and formulate a refined and improved approach for implementation under NPEP. Lines of thinking emerging from this process are reflected in informal MAF discussion documents drafted during the COSOP formulation process. Moreover, since IFAD is closely following the development of this overall policy framework, there is no need for further elaboration of its overall content at this point. It is useful to keep this framework in mind, however, as we review the status of current policies.

1.2 Upland-Oriented Policies

The four policy areas mentioned in the mandate for this study cover topics that continue to be directly relevant to upland agricultural development under the new NPEP, especially in upland areas in the Lao PDR. The following sections briefly review their development and current status.

1.2.1 Shifting Cultivation Reduction

As in most of the wider montane mainland Southeast Asia (MMSEA) eco-region⁴, traditional agricultural systems have long included components using of shifting cultivation practices that employ periods of forest regeneration to sustain their productivity. Although systems vary by ethnic group and location, they have been a major component of the livelihoods of mountain peoples. Estimates in 2000 indicate about 39 percent of the total Lao population still depended on shifting cultivation, which covered about 13 percent of the total land area of the country.⁵

Concern about increasing negative impacts of shifting cultivation has been a consistent theme of government policy since liberation. A 1979 national decree on forestry protection⁶ included provisions for prohibition of shifting cultivation in watershed areas, and for ‘traditional use’ of forest by local people, as well as for national resource ownership, for permission of forest conversion and logging, and for promotion of tree planting for restoration.⁷ Although implementation was very limited, these themes continued to have an important place in the national policy arena. After the New Economic Mechanism (NEM) was introduced in 1986, the 2nd Socio-economic development plan included as its second priority ‘... a program to curb and eventually stabilize shifting cultivation after increasing food production’⁸, because shifting cultivation was destroying large areas of forest each year. It also stressed, however, that shifting cultivation should not be stabilized by order and force, but rather by providing alternative crops or livelihoods to replace shifting cultivation practices.

The first National Forestry Conference held in 1989 marked a major point in the development of forestry in the Lao PDR. Stabilization of shifting cultivation was high on the conference agenda, and allocation of forest and forestland to villagers and villages was mentioned in the resolution as a policy tool to rationalize forest use and introduce alternatives to shifting cultivation.⁹ Land allocation and most all other land use-related policies since then have included ‘stabilization’ of shifting cultivation as a central objective. Indeed, by 1998 government documents acknowledged that rural development priorities up to that point were aimed primarily at ensuring national rice self-sufficiency (from lowland production) and restricting shifting cultivation.¹⁰

Increasingly serious negative environmental impacts are attributed to ‘slash-and-burn’ production activities practiced by ‘unsettled’ families. Rationales for efforts to end shifting cultivation include: ‘Given the fact that for slash-and-burn agriculture to be sustainable, a cycle of 20 to 25 years is needed to give forests a chance to fully recover before they can be ‘slash-and-burned’ again, we must recognize that the growing population pressure makes this cycle increasingly difficult to respect. There do not seem to be easy solutions at hand, but our approach is probably the most convincing and the least perturbing one.’¹¹ The current strategic vision for the agricultural sector states that:

*Shifting cultivation is seen as an unsustainable practice by the Government, who have declared their intention to stabilize it by the year 2000 and beyond in favor of more stable and productive agricultural methods, including the more sustainable rotational land use system...The strategy to stabilize shifting cultivation is multi-dimensional: (1) sedentarization of agriculture in sloping land areas through farming systems diversification and agro-forestry development; (2) opening market access through feeder road development and market information delivery; (3) land use zoning based on slope and land capability; (4) rural savings mobilization and credit extension; and (5) land allocation and land use occupancy entitlement.*¹²

Virtually every major policy, program, and project document related to agriculture, forestry or natural resource management in mountain areas includes similar arguments. Moreover, in 2001 the 7th Party Congress set development targets that were endorsed by the National Assembly, which included basic ‘stabilization’ of pioneering shifting cultivation by 2005, and complete stabilization (eradication) by 2010.¹³ Five mountain provinces of the North are the main focus, with each being assigned an annual reduction target.¹⁴ Actual implementation of this policy has been and continues to be closely tied with policies discussed in the following three sections.

1.2.2 Elimination of Opium Poppy

Problems associated with opium production in highland zones have been another feature of relatively recent history in the MMSEA eco-region, and the Lao PDR has been no exception. For highland villagers, opium has provided a source of cash income that has helped compensate for the usually lower productivity of rice cultivation in higher elevation zones. And, since sites for paddy are also usually scarce in highland zones, opium is also linked with agricultural systems that employ shifting cultivation techniques, and in many ways is a high-priority special case sub-set of the ‘shifting cultivation problem’. The amount of income from growing opium actually received by mountain villagers, however, has been modest enough that opium crop substitution programs – combined with subsequent enforcement after viable alternatives are in place – were implemented quite successfully in neighboring Thailand.¹⁵ Experience there and elsewhere with such programs has evolved into what is now called, ‘alternative development’ for drug control.

Systematic efforts to control opium production in the Lao PDR also began after the 1989 National Forestry Conference, and in 1990 a high-level inter-ministerial Lao National Commission for Drug Control and Supervision (LCDC) was established, followed by establishment of provincial-level drug control committees (PCDCs). The first Comprehensive Drug Control Programme was jointly elaborated with the United Nations Drug Control Programme (UNDCP) for the period of 1994-2000. An Opium Elimination Strategy elaborated in 1999 aims at opium elimination in 2006, while an ASEAN goal aims for a drug-free zone by 2015. In March 2001, the 7th Party Congress resolved to eliminate opium by 2005, in close association with its goal to ‘stabilize’ shifting cultivation. This overall process is supported by various agencies for international cooperation, such as UNDCP, GTZ, NCA, and U.S. Embassy/Narcotic Affairs.¹⁶

The first pilot project for integrated highland development within drug plant producing areas of the Lao PDR began in 1989. The Palaveck project was able to achieve its goal of complete opium elimination in 10 target villages with 5,089 people, over a period of six years with a USD\$6.68 million budget. In 1992, the UNDCP began cooperation with IFAD in the highlands of Xieng Khouang Province, which later became the Nonghet Alternative Development Project, and then extended support to a project in Oudomxay (since 1999) and a component of the ADB Shifting Cultivation Stabilization Project in Houaphan (since 2000), as well as providing support for a project carried out by Norwegian Church Aid (NCA). GTZ, who began support for drug control programs in 1999, has 3 projects active in Bokeo, Xieng Khouang and Luang Namtha Provinces. Although the U.S. Embassy has ended support for activities in Houaphan Province, it still supports alternative development projects in Phongsaly and Oudomsay, and is considering a new project in Luang Namtha.¹⁷

A review of progress during 1989-2001 under these projects¹⁸, including a survey of all major agencies involved, indicated that progress and constraints under these projects (not including special issues such as drug addiction, etc.) are quite similar to those generally encountered by agricultural and rural development projects in mountain areas of the country. Given their focus on relatively high elevation zones, there has been somewhat more effort to test and introduce sub-tropical and temperate tree crops, as well as relatively high priority on establishing alternative sources of cash income – to meet both basic needs and rising expectations – in order to replace that obtained from opium. But experience with marketing cash crops is still quite limited, and there appears to be recognition that temperate fruit tree development will require at least 20 years.

1.2.3 Land and Forest Allocation

Consistent with the government's desire to reduce shifting cultivation and eliminate opium, a major component of the government's vision for rural development is establishment of 'settled' communities in upland areas that practice permanent agriculture on defined land parcels, and have access to physical and social service infrastructure that links them with wider economic and social systems. One of the key tools for achieving this vision is through a systematic process of land use planning and land and forest allocation.

In the wake of recommendations from the first National Forestry Conference in 1989, the central government revised its natural resources management policies, based on concerns about degradation of natural resources, and especially loss of forest cover, soil degradation, and clean water supply, which were seen to be based on a direct, causal link between forest loss and widespread shifting cultivation of subsistence upland rice production.¹⁹ A national decree²⁰ was then issued that focused on clarifying the Ministry of Agriculture and Forestry's roles and duties concerning forestry, allocation of forest and forestland, and various restrictions on logging by enterprises and local people.²¹ MAF developed prototype land and forest allocation guidelines which were discussed internally and then tested by the Department of Forestry during 1990-96 in representative shifting cultivation areas in Luang Prabang and Sayaboury Provinces.²² In 1993 a national decree²³ provided a new legal framework for forestry, and provided a base for the new national Forestry Law that would replace it in 1996. This, along with a national decree expanding the land allocation process²⁴ and a 1996 MAF ministerial order²⁵ provided the legal framework and guidelines for implementation of the land and forest allocation program²⁶, and the 1997 Land Law provides a new framework for the types and size limits of areas that can be allocated.²⁷

The stated objectives of the land and forest allocation program are: (i) to promote crop production to replace shifting cultivation through allocation and titling of production land and (ii) to protect forest through classification and stabilization of shifting cultivation. The program has two main components:

- (1) allocation of degraded land to households (with a 3-year temporary land use certificate) for crop cultivation, tree planting or grazing; satisfactory performance leads to household gain land title.
- (2) after land allocation, village forest land is classified (use, protection, rehabilitation, etc.) and agreements on rules governing each forest type are signed.²⁸

Under MAF guidelines, the process of land use planning and land allocation (LUP/LA) is to involve local communities in resource management through the 8-step participatory land use planning (PLUP) methodology indicated in Figure 1.

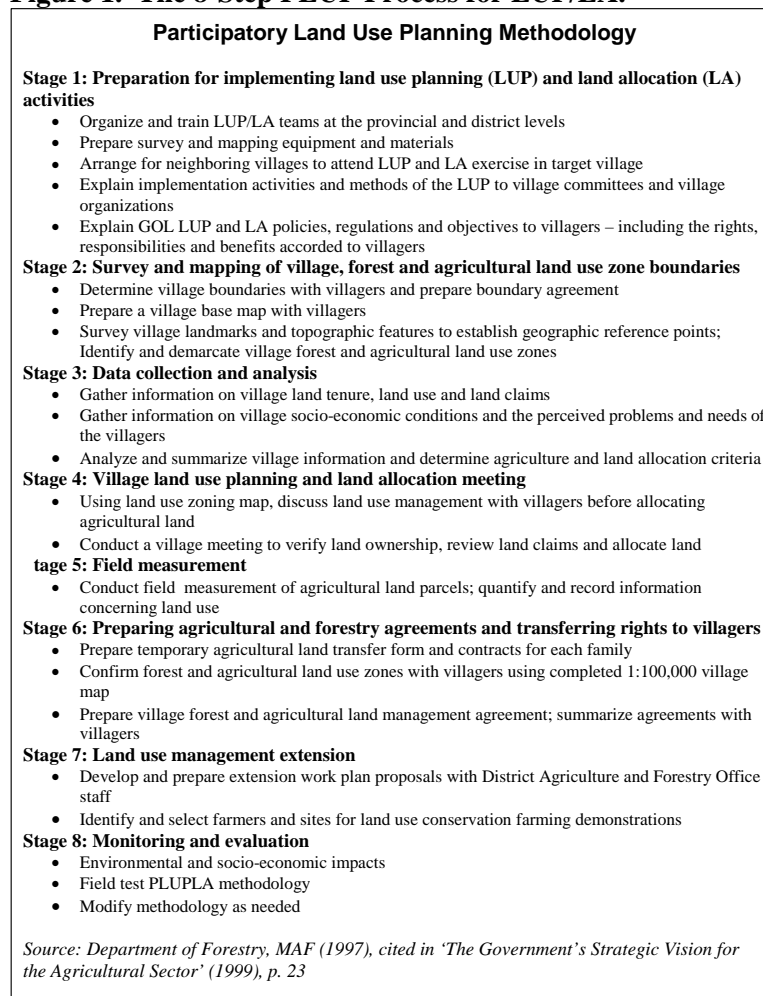
The Central Committee for Land and Forest Allocation set annual targets (number of villages) for each province, and an annual meeting reviewed progress. During 1996 to 2002, allocation was carried out in some 6,200 villages (>50% of national total) and more than 379 thousand households (>60% of all agriculture households), covering more than 8 million hectares of land area²⁹. Thus, LUP/LA has been characterized as one of very few forest related programs with clearly defined policy objectives, detailed instruction for field implementation, and nationwide implementation.³⁰

There is also widespread agreement, however, that while implementation of LUP/LA has made considerable progress in meeting quantitative targets, there are many problems with the quality of the results, and thus the impact on local communities living in mountain areas. Much of the forest land allocated has been classed within protected categories (conservation, protection, regeneration); of some 100,000 ha of forest allocated during 2000-01, 91 percent was under protected categories, while only 9 percent was village production forest; only 5 percent of all land allocated was for crop and livestock production.³¹ Moreover, people working in areas where LUP/LA has been implemented are particularly unanimous in observing that the last two steps of the process – land use management extension and monitoring and evaluation – have very rarely been included. Indeed, in informal MAF discussion documents the government has acknowledged that, implementation of LUP/LA has been largely inconsistent and ineffective because the process has been mostly prescriptive, rather than participatory, and implemented by untrained staff. The problem is seen not so much in the land allocation *per se*, as in the way the process is carried out and land allocated.

Several people who have closely observed and assisted in the development of this process also see the need for more clarity and agreement in the overall objectives and sequential steps of the process. In a discussion paper written in 2000, a key technical advisor to the land management component of the Lao-Swedish Forestry Programme (LSFP) posed an important question of ‘Land allocation or land use zoning: what is the priority?’³² Several people have also made the observation that since there has been so little monitoring or evaluation of what has occurred, it has been difficult to assess the impacts of the program or to suggest ways in which it could be improved.

However, as the national Participatory Poverty Assessment began indicating that upland populations across the country are identifying the land allocation policy as a major factor behind their increasing hardship³³, several efforts are now underway to more closely examine these issues, along

Figure 1. The 8-Step PLUP Process for LUP/LA.



with additional issues associated with the focal site strategy. Work in Houaphan Province under the ADB-supported Stabilization of Shifting Cultivation Project, for example, is seeking to pilot ways to really work through the full participatory approach with local staff in specific villages. Their work appears to underscore the importance of a phased approach that puts very substantial effort into local capacity building and participatory zoning of village lands before any household land allocation is considered.³⁴

1.2.4 Focal Site Strategy, and Village Relocation and Consolidation

The ‘focal site’ strategy has been a central feature of rural development strategy in the Lao PDR for nearly 10 years, and thus is closely associated with implementation of all upland-oriented policies discussed in this section. The basic notion is one of an area-based approach that begins with a strategically selected sub-set of locations where bundles of programs implement a set of related policies in a coordinated, and presumably synergistic manner. In principle, the approach aims to serve both as a ‘pilot project’ to test systematic and coordinated implementation under a wide range of conditions, as well as a ‘demonstration area’ for all to see the full process and its positive results, which should help facilitate more widespread subsequent implementation.

The focal site strategy was initiated in 1994/95 under the National Development Programme, which defined these sites as ‘centers of change and learning’ for rural development.³⁵ The Central Leading Committee for Rural Development and its province-level counterparts selected clusters of villages as sites from lists submitted by the provinces, based on three criteria: (1) urgency for poverty alleviation (isolated, poor access, practicing slash-and-burn agriculture, not meeting basic human needs); (2) potential for economic development (potential for settled agriculture, irrigation, NTFPs, tourism) and potential for local cross-border relations (good relations, trade, technology exchange, security), and (3) risk areas with opium, unexploded ordinance, or flood hazards.³⁶ The central Leading Committee for Rural Development organized regional workshops to explain the associated planning approach, and provinces selected sites and identified investment priorities that would lead to their integrated development. By 1997, a total of 62 focal sites had been identified throughout the country, with an average of 16 villages and 5,200 people per site.

In 1998, progress of the focal site approach was assessed and elaborated.³⁷ Thus far, village participation did not appear to have been very convincing, and proposed projects were too similar to have been a reflection of the particular local realities of the focal sites. Despite its various shortcomings, however, the program was seen to have clarified needs for its further development, and especially in various aspects of human resource development, methodology and organization linked to the strengthening of rural development institutions. Accordingly, a more holistic approach was articulated for the integrated development of the ‘clusters’ of villages at each focal site.

During early 2001 further assessment of the remaining 59 sites indicated focal site selection had been biased toward poor and politically important areas, with insufficient emphasis on potential areas for development, that leading committee roles were still unclear, that monitoring and evaluation systems were still not in place, that clear operational targets were needed for disbursement and monitoring, and that staff capacity at provincial levels still needed substantial strengthening. Nevertheless, the focal site approach was found to be an approach worthy of further effort because: (1) it has the potential to conduct necessary integrated planning and implementation that is difficult for line agencies; (2) it is the most effective way to use limited budget and scarce local human resources; and (3) it has potential to conduct bottom-up participatory planning and implementation process that is essential for rural development.³⁸

Village relocation and consolidation. The 1998 focal site document went to considerable length to explain why these efforts were necessary, and how they would be conducted. The central argument was the need for efficient extension services, and for an active, participatory community development structure that would bring local populations into the planning and implementation of rural development programs. Village consolidation was seen as ‘...establishment of permanent occupations’³⁹ that would help meet national objectives that include rice production, commercial crops, stopping slash-and-burn agriculture, and improving access to development services.

Resettlement was clarified to refer to ‘...stabilization of production, or establishment of permanent farming conditions’⁴⁰. Thus, ‘unsettled families’ living in ‘scattered, remote and moving communities’ whose ‘traditional methods of slash-and-burn cultivation are no longer sustainable’ would be attracted to sites with improved access to development services, since they could not otherwise be reached with the limited resources available. Indeed, in addition to the ‘push-effect’ of these efforts, a ‘pull-effect’ was already being observed as villagers voluntarily established new settlements along new roads. Although not mentioned in most documents, many officials informally note that relocation of villages out of remote areas is also helpful in reducing opium production.

Strengthening Human Resources at Focal Sites. Recognizing the range of problems associated with village resettlement and consolidation, the program has sought to make focal sites into ‘integrated model rural development clusters’. ‘Cornerstones’ for the success of this effort would be consultation, coordination and strengthening of rural development institutions. At the provincial level, the Provincial Rural Development Committee would coordinate sectoral and external agencies, and link with local and central levels. The office of the District Chief would provide leadership for implementing extension services, gathering data, and providing guidance, encouragement, coordination and monitoring of extension staff and village activities. Activities at the village level would focus on village volunteers and village support committees.⁴¹ A major Human Resource Development Programme was designed to strengthen the capacity of these actors to conduct their roles as conceived under this strategy, and a high-level government directive⁴² in 2000 further clarified and reinforced this basic approach.

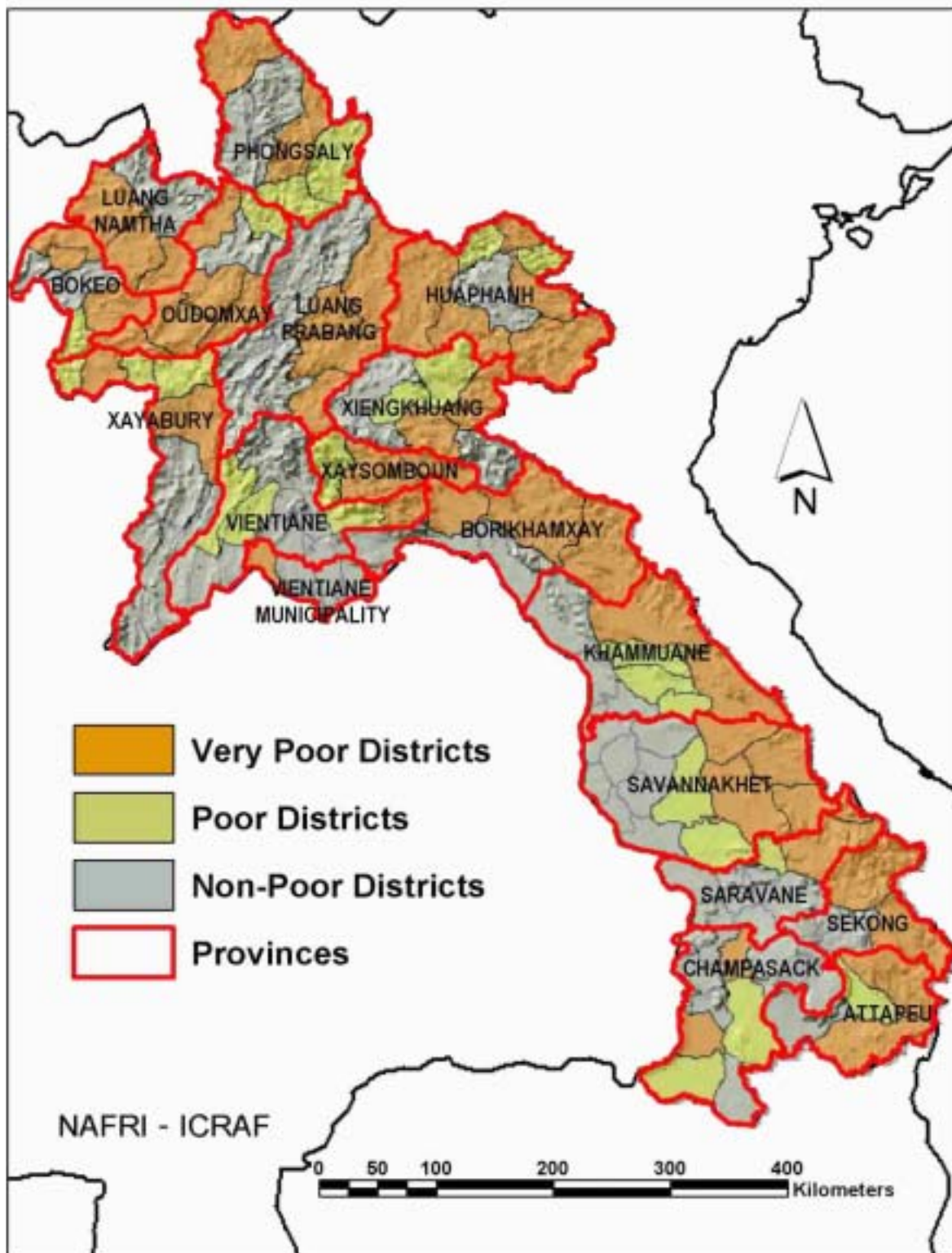
From Focal Sites to Zonal Concentration of Resources. The new National Poverty Eradication Programme (NPEP)⁴³ seeks to expand the core of the focal site approach to sites in all of the poorest districts of the country. Efforts to identify poor areas began in 2001 with the high-level government directive ‘Concerning the establishment of a plan for the eradication of poverty’⁴⁴, which articulated criteria for operationally defining poor households, villages, and districts, and mapped out a ‘rural development *cum* poverty eradication strategy’ promoting access to (1) agriculture and forest technology; (2) markets through road and information improvement; (3) social services; (4) human resource development; and (5) financial resources. The government emphasizes that an essential policy underpinning this instruction is that ‘grass roots levels should take initiatives in poverty alleviation (through development) in their own areas’.⁴⁵

Community-driven Rural Development, Poor Districts & Poverty Eradication. Recognizing the close link between rural poverty and agricultural development in Lao society, a subsequent high-level government directive⁴⁶ shifted responsibility for planning and coordinating the rural development process back to the Ministry of Agriculture and Forestry (MAF). The rural development strategy mapped out by MAF in the draft NPEP states that:

*...the “focal development area approach” targets both the remote areas where poverty is endemic and areas with growth and development potential; it allows to tackle development in an integrated manner by opening up access to remote areas, stabilizing shifting cultivation, facilitating economic activities in an increasingly market-oriented context, improving livelihoods through access to social services, and ultimately aims at integrating all the regions of the country into a dynamic national economy. The focal development area approach favours a comprehensive rural development strategy of concentrating rural development in clusters or zones (khet/tasseng) where a full range of appropriate rural development activities in agriculture, social sectors, rural institutional capacity building and physical access to villages and markets are undertaken in a synergistic manner to boost household income and improve human development in order to eradicate basic poverty as defined in Instruction 010.*⁴⁷

Thus, this approach has become central to implementation of IFAD’s area-based and poverty-focused approach to rural development in the Lao PDR. The location of the 72 districts identified as poor and the 47 districts now identified as very poor are indicated in Figure 2. As most of the poorest districts are in upland and mountain areas, and the government has indicated its intention to apply the newest incarnation of its focal site strategy in the areas, the overall issues associated with the upland-directed policies in this section will continue to be important considerations.

Figure 2. Poor and Very Poor Districts Under NPEP



1.3 Current Visions of Agriculture & Natural Resource Management

Given the primary focus of this report on agricultural development in upland areas, where all the policies discussed in the previous section are of central importance, one needs to understand the strategic thinking of the Lao government and the visions of the future with which it is associated, in order to more clearly understand the direction of development programs. Fortunately, three documents help provide access to dimensions of strategic thinking related to closely linked areas of agricultural development and natural resource management.

1.3.1 Strategic Vision for Agriculture

This landmark document⁴⁸ issued in 1999 lays out the government's fundamental strategy for agricultural development, which has been – and continues to be – incorporated into all major subsequent plans and programs, including the NPEP. Elements of particular relevance here include:

Two Major Agricultural Zones.

Based on the assessment that a dual economy began developing during the 1990's, two major agro-geographical zones are identified in the country:

- Mekong Corridor Flatlands (slope <12%), where agricultural transformation has begun to proceed quite rapidly.
- Sloping lands, where subsistence agriculture and resource degradation result in poverty and negative downstream impacts.

The rough geographic distribution of these two zones is shown in Figure 3.

The development approach for upland areas is to center on area-based conservation and livelihood systems.

Five broad generic types of farming systems are also identified⁴⁹ as

- **Rainfed paddy-based system** found mostly in flatland areas
- **Irrigated paddy-based system** found mostly in lowland areas
- **Sloping land Farming Systems:**
 - Mixed shifting cultivation and paddy systems, often found at middle altitudes
 - Exclusively shifting cultivation system, typically found at middle & high altitudes
- **Plateau farming system** found on flat sloping land plateaus, composed mainly of subsistence shifting cultivation mixed with tree crops
- **Highland system** characterized by subsistence shifting cultivation with some cash sales of opium and swine

These systems are comprised of several components in varying proportions, typically rice (flatland paddy or sloping land rainfed), livestock, aquaculture and semi-permanent and cash cropping, supplemented by gardens, non-timber forest products, fishing and hunting.

Different basic development strategies to be directed toward development of farming systems in each major agro-geographical zone are indicated in Figure 4.

Figure 3. Flatland & Uplands in Lao PDR

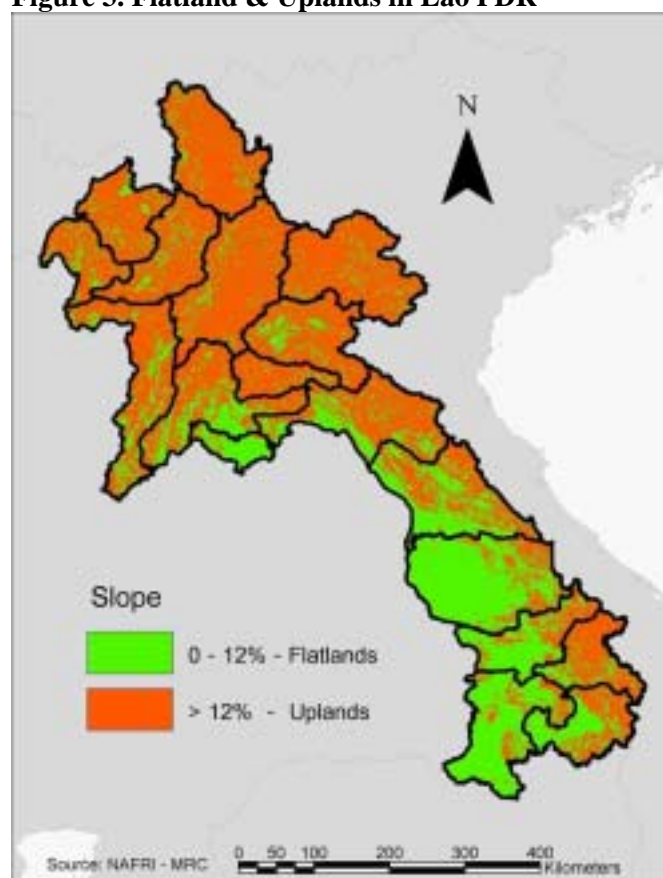


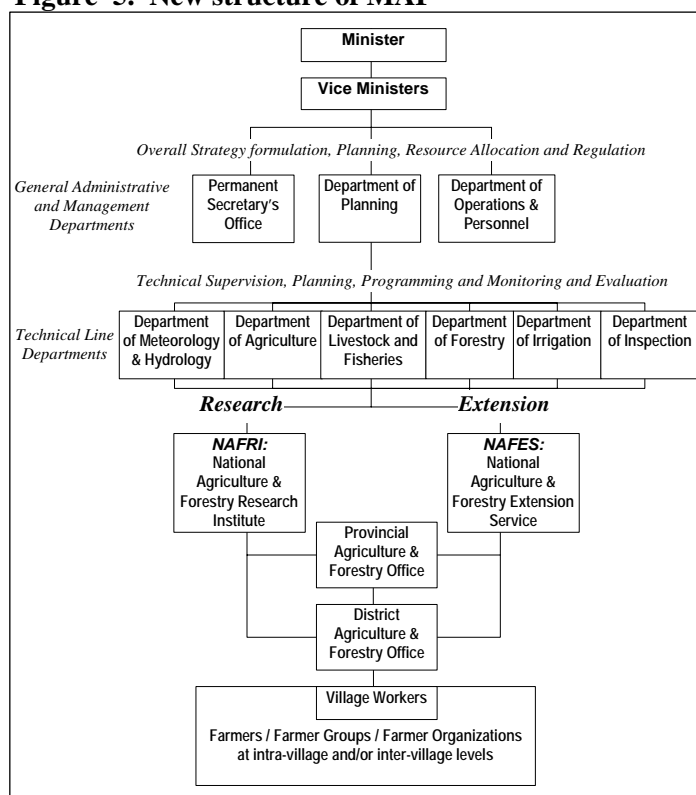
Figure 4. Comparative Farming Systems Strategies for Flatland and Sloping Land Development

FLATLANDS: Emphasis on	SLOPING LANDS: Emphasis on
<ul style="list-style-type: none"> ● Intensified cash crop, livestock and fisheries production through farmer-demand driven extension ● Intensified and expanded value-added agricultural commodity processing for domestic consumption and exports ● Agricultural commodity market research and market information systems delivery ● Agriculture product grades and standards development and regional marketing link promotion ● Strengthening and expanding market driven, competitive rural credit facilities ● Supporting and strengthening agribusiness lending by state-owned commercial banks and private commercial banks ● Rehabilitating and expanding dry season irrigation systems and improving their efficiency through community management transfer 	<ul style="list-style-type: none"> ● Land-use zoning based on bio-physical (e.g. slope and land capability) and socio-economic parameters ● Participatory land allocation and land-use occupancy entitlement ● Farming systems diversification and agroforestry development through adaptive research, trials and demonstrations on farmers' fields ● Community management of natural resources ● Expansion and intensification of small-scale community managed irrigated systems ● Farmer demand-driven research and extension ● Sustainable land management with soil erosion control, afforestation and conservation management ● Rural savings mobilization and micro credit extension; competitive rural finance system development with market determined interest rates in most areas, and subsidized rates in some areas to promote technology adoption among the poorest socio-economic strata ● Strengthen the capacity and legal framework of state-owned commercial banks in commercial and banking transactions ● Opening community market access through feeder road upgrading and expansion and market information delivery

Source: MAF. 1999. *The Government's Strategic Vision for the Agricultural Sector*.

The vision also includes a new structural organization for the Ministry of Agriculture and Forestry, as depicted in Figure 5, aimed at enhancing its capacity to respond to farmer needs in an evolving market economy. The concept begins with reorganizing the District Agriculture and Forestry Office (DAFO) and developing its staff to become general farming systems extension workers with primary responsibility for regular interaction with local communities, farmers and village volunteer workers and understanding their self-expressed needs. Staff in the Provincial Agriculture and Forestry Office (PAFO) are retrained to serve as Subject Matter Specialists, providing technical capacity at the provincial level in order to respond to the needs of district extension workers; specialties will vary with the characteristics and needs of the province. The central level will be responsive to provincial needs, and will provide national focus for adaptive research and extension support services through NAFRI and NAFES.

Figure 5. New structure of MAF



Consolidated central adaptive research services were launched under NAFRI through reorganization and elaboration of the existing set of research units within various departments of the

old ministry structure. Since the consolidated extension agency would need to be newly created, however, its establishment could not be so rapidly accomplished.

By 2001, the strategic vision document was supplemented by a Master Plan Study on Integrated Agricultural Development, providing a much more detailed action plan for implementation of the new agricultural sector vision, including outlines for 110 projects and programs classified according to priorities for different timeframes, areas, and sectors.⁵⁰

It is worth noting that activities identified in the vision and master plan study that would be directly aimed toward increasing, rather than constraining, villager production in sloping lands primarily centered on: (1) expanded small-scale irrigation systems to improve food buffer stocks and help diversify production; (2) agroforestry for subsistence needs, livestock fodder, and/or marketable commodities such as bamboo, paper mulberry, resin, silk, fuelwood or small timber; (3) expanded livestock production; (4) inland fisheries; and (5) production and processing of non-timber forest products (NTFPs).

1.3.2 Strategic Vision for Integrated Watershed Management

Government commitment to develop and implement a major watershed management component as part of its overall land use zoning and planning approach has become more apparent during recent years, and there is a close linkage with efforts to establish and maintain protection forest areas. Activities under the National Capacity Building Project included a project located within MAF's Department of Planning to further develop this approach, which culminated in a MAF strategic vision for integrated watershed management⁵¹ and a range of supporting and related documents. This unit in MAF is currently assisting Xieng Khouang and Huaphan Provinces to develop the Nam Neun provincial level integrated watershed management plan, and is preparing the Nam Ngum River Basin Sector Project, which would develop and implement integrated watershed management plans for the entire Nam Ngum River Basin. The Ministry is also establishing a Natural Resources Information Center to coordinate all data within the Ministry in order to support districts and provinces with data analysis and generation of maps for integrated watershed management planning.

A core component of the Ministry's vision is that resource allocation to upland development should be based on integrated watershed management plans. Thus, mechanisms and procedures for incorporating integrated watershed management should be integrated into the national planning framework in close collaboration with the Committee for Planning and Cooperation (CPC). All provinces should develop overall strategies and priorities for sub-watersheds covered by the province. All districts should develop watershed plans either by themselves or together with neighboring districts depending on the biophysical boundaries of the watershed. By 2010 integrated watershed management plans should have been developed for the whole country at district and provincial levels. Within this present five-year plan 2001-2005, focus will be on developing watershed plans in all the eight northern provinces, which are home for the

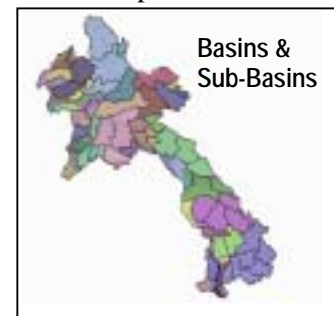
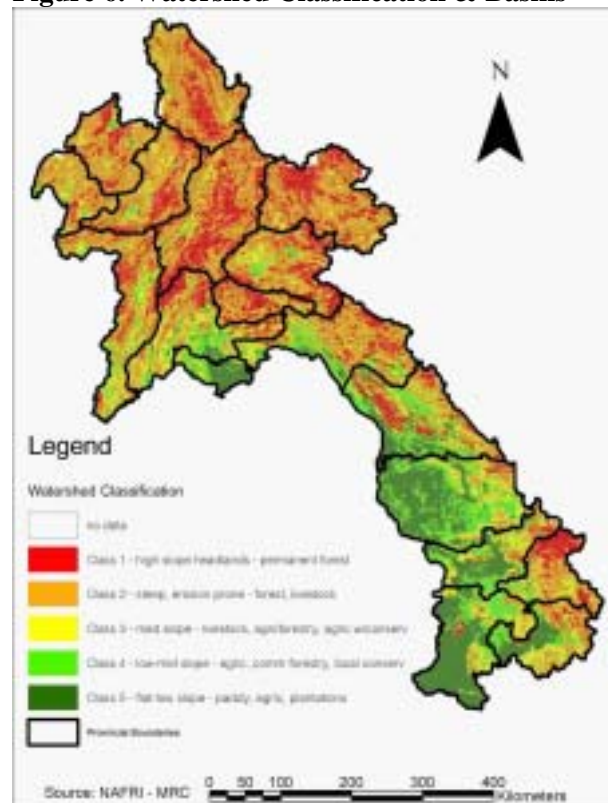


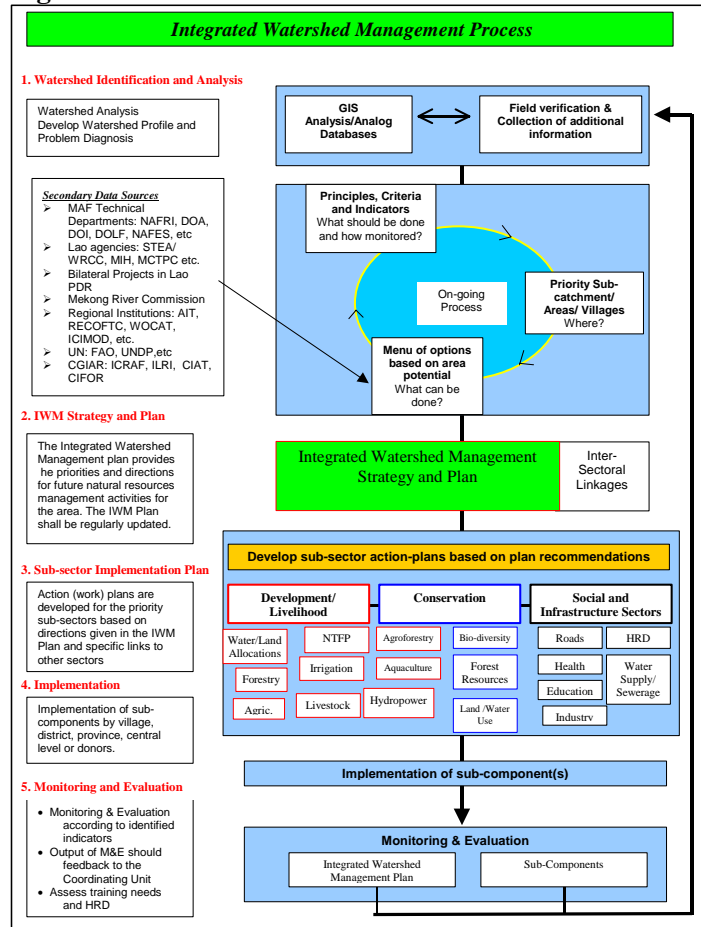
Figure 6. Watershed Classification & Basins



priority watersheds of the country because of important water resources and high incidence of shifting cultivation and poverty. This will support the government's plans to significantly reduce shifting cultivation by 70% and alleviate poverty in Northern Laos. The challenge is now to develop staff capacities in basic, technical and facilitation skills to support nationwide integrated watershed management planning.⁵² The watershed classification system established in association with the Mekong River Commission is one source of biophysical information, as indicated in Figure 6, which shows this classification in the context of major river basins and provinces. Watershed classes 1, 2, and 3 represent 74 percent of the total land area of Laos; in 1993 only 11 percent was covered by dense forest, and 44 percent had no forest cover.⁵³

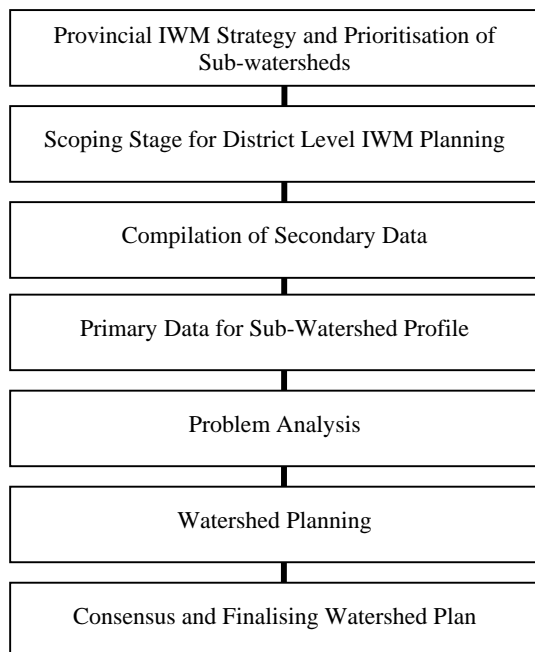
The overall IWM approach, however, is seen as a more holistic area-based planning process, which extends the government's policy on sustainable natural resources management and development activities, as depicted in Figure 7.

Figure 7. The IWM Process



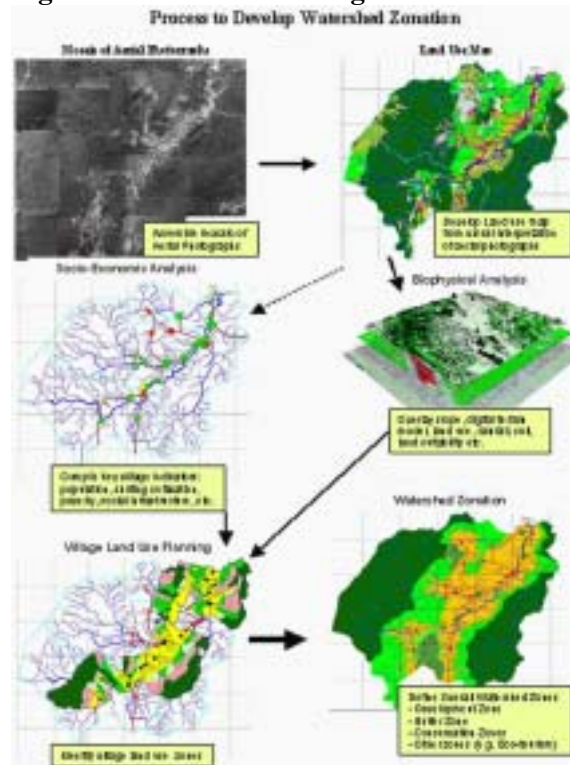
Source: MAF. 2002. Strategic Vision for IWM

Figure 8. Seven steps to develop a district level integrated watershed management plan



Source: MAF. 2002 Strategic Vision for IWM

Figure 9. Watershed Zoning Process



Source: MAF. 2002 Strategic Vision for IWM

The IWM planning process distinguishes between the provincial level, where ranking of sub-watersheds and strategic options for a large watershed should be identified, and the district level where watershed zonation, more specific interventions in development, buffer zone and conservation areas should be discussed and agreed upon by district sub-sectors. Sub-sector plans should be based on the agreed direction given by the IWM Plan and implanted accordingly. The 7 steps for developing a district-level IWM plan are depicted in Figure 8, and a graphic example of watershed zoning in one of the pilot test areas is depicted in Figure 9.

As it is presented thus far, this is neither a simple nor an easy process, and it is not yet entirely clear how it will be able to interface with other mandated participatory processes in the uplands. These are probably some of the reasons why it appears to be proceeding in a phased manner, with pilot 'model' areas and priority provinces. Given its integrative framework and character, however, it is a potentially important line of activity that could have numerous implications for land use and development in upland zones under the National Poverty Eradication Program.

1. Issue for area-based development projects:

Since Integrated Watershed Management is being described as a 'bold new approach', its development may provide a framework for coordinating and integrating the multiple policies and visions directed toward upland development.

1. Points for policy dialogue:

Does the government plan to develop the Integrated Watershed Management approach as a coordinating mechanism for implementing upland development programs under NPEP? If so, how will it relate to design and implementation of area-based development projects?

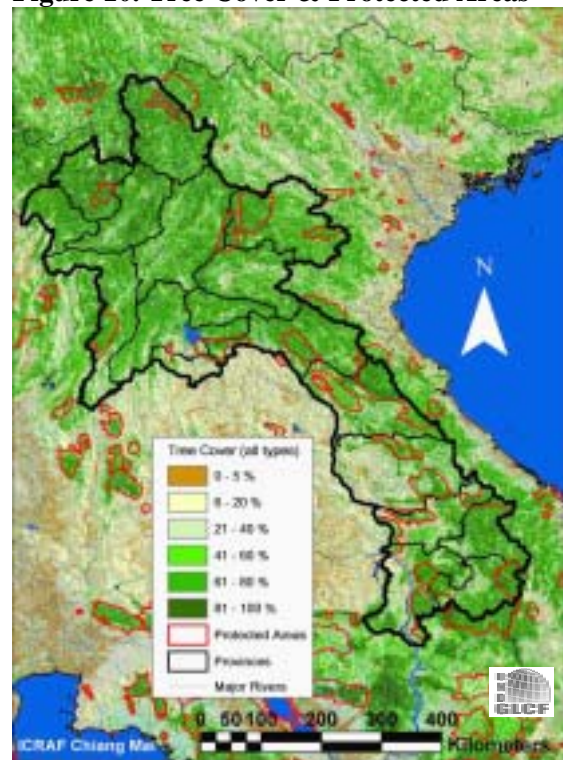
1.3.3 Forestry Strategy to Year 2020 (Draft)

A new comprehensive Forestry Law was enacted in 1996, and together with an associated implementing PM Decree issued in late 1999, provides the basic legal framework for forestry in the Lao PDR today.⁵⁴ Supporting decrees and regulations are being developed and issued, and now a new forestry sector strategy to the year 2020 has been recently presented in a draft form for discussion, and is currently being revised in light of input and suggestions received.⁵⁵ This section reviews some elements of the draft strategy of particular importance for village land use in upland areas.

Forest Trends. Forest cover is estimated to have declined from 70 percent in 1940 to 47 percent in 1982, to about 41 percent in 2002/03, while since 1982 'potential forest' areas have increased by 11 percent to include 47 percent of the country and 'unstocked' areas grew by 27 percent to nearly 43 percent of total land area. And within forested areas, deterioration in forest quality is reflected in increased fragmentation, lower forest density, and smaller stand structure. A rough map of tree density in 2001 as detected by MODIS remote sensing for the Lao PDR and neighboring areas is presented in Figure 10.

While substantial forest loss has been from conversion necessary for expansion of agriculture and infrastructure, additional causes are seen to

Figure 10. Tree Cover & Protected Areas



Source: ICRAF with GLCF data from NASA Modis 2001

include 'unsustainable practices' including shifting cultivation and excessive logging and other forest product harvest.⁵⁶ Moreover, the government acknowledges that timber harvesting has in some cases had a negative impact on the poor by destroying the very forests on which they depend, and it is therefore seeking to control timber harvesting and foster village participation in forest management in order to improve livelihoods of the poor.⁵⁷

The multiple roles played by the forestry sector include: (1) one of the fastest-growing sectors of the economy, providing materials, jobs and revenue for both public and private sectors, as well as foreign exchange; (2) a safety net in livelihoods of rural people by providing timber and NTFPs for both home use and sale; (3) maintenance of soil and water resources and protection from flooding; and (4) protection of biodiversity of national, regional and global significance.⁵⁸ The new strategy seeks to balance these needs.

Forest Classification. Forests in the Lao PDR are classified into five categories that in aggregate include 85 percent of the total land area.⁵⁹ The first three are fairly conventional and are delineated at national and provincial levels on large-scale maps: (1) production forests are intended for sustainable provision of timber and other forest products for national and local needs; (2) conservation forests aim to protect and conserve species, habitats and other valuable entities; (3) protection forests seek to protect primarily important watershed areas, but also areas of importance for national security, disaster prevention and environmental protection. The remaining two categories focus on forest areas associated largely with efforts to 'stabilize' shifting cultivation, and are intended to be identified through village level land and forest allocation processes: (4) regeneration forests are fallows or other areas where forest regrowth is targeted for regeneration into permanent forest cover; and (5) degraded forests are areas with little or no remaining forest cover that can be used for tree planting or allocation to individuals or organizations for permanent agriculture, livestock, tree planting or other uses in accordance with national development plans.

Village Forest Lands. Through the LUP/LA processes developed for land and forest allocation, land use zoning within village boundaries delineates forest areas that are classified into one of the five categories of the national system. Under village classifications production forest is named Village Production Forest, and so on. Thus, village production and protection forests are being demarcated on village lands located within larger national and provincial conservation, production and protection forests. Although this double-layered classification reflects reality and is necessary to maintain, there are no clear criteria for delineation of agriculture and village forest areas, and current laws still provide no clear definition on the legal status of village forest.⁶⁰

A MAF regulation on forest management issued in June 2001 consolidates provisions related to village forests, and recognizes collection of NTFPs for sale if management plans are formulated and approved. A recent high-level decree⁶¹ providing for delineation of production forest also mandates participation of villages in all aspects of production forest management, including planning and benefit sharing in accordance with contracts between villages and district authorities.⁶²

Non-Timber Forest Products. It is widely recognized that NTFPs provide a major source of food, fodder, fuel, income and other household needs, and are essential for the livelihoods of many rural peoples. Significant trends showing increasing interest in conservation and development of NTFPs include: (1) local innovators domesticating NTFPs in agroforests and home gardens; (2) community capacity demonstrated in effective NTFP management; (3) policies reinforcing the NTFP sub-sector; (4) private investment in small-scale NTFP processing. At the same time, however, potential threats to these efforts include: (a) accelerated deforestation, poor logging practices, fire and other disturbances; (b) increased market access and demand without clear rules for resource allocation, tenure security and sustainable management regimes; (c) local technical knowledge of older generations being lost due to relocation and changing lifestyles of the youth.⁶³ Other constraints on NTFP utilization and development include lack of knowledge about domestication and sustainable management technologies, as well as on current and potential market chains, capacities, prices, quality standards, and international market access requirements. Thus, implementation of policy regulating marketing and development of NTFP resources will require substantial capacity building within both government and other stakeholders, including villagers, traders and processors.⁶⁴

Shifting Cultivation. In discussing the strategy to deal with stabilization of shifting cultivation, the new draft forestry strategy notes that rotational shifting cultivation on allocated plots or within agreed areas, without encroachment into new forest areas, is an accepted alternative to pioneering shifting cultivation, which is meant to be the real target of this policy – although sedentary cultivation using conservation farming methods is still, of course, preferred. But in response to targets assigned to provinces, between 1990 – 2001 shifting cultivation area is said to have dropped from 249,000 ha to 110,000 ha, and the number of people involved from 210,000 families to 99,000 families. There are no statistics, however, on the permanent occupations and livelihoods of farmers that abandoned shifting cultivation, although many reported successes are promoted as models.⁶⁵

Potential Reforms. Among the substantial list of interesting ideas proposed in the draft strategy for further articulation and development are:

- Introduce an overall land use planning system at macro and field levels by revision of the Land Law and other land-related laws
- Clarify definitions and status of village forest in the Forestry Law
- Review the land and forest allocation program in terms of impacts on villagers' livelihoods for more flexible implementation according to village socio-economic conditions
- Consider participatory land use planning based on the legal status of village land and forest, instead of land and forest allocation
- Clarify definitions of types of shifting cultivation and study environmental and forest impacts according to type
- Consider setting target numbers of households to be assisted in adopting improved livelihood systems, instead of area of shifting cultivation to be reduced
- Assist villagers in formulating village land and forest management plans on the basis of overall land use plans, including focus on sustainable and equitable use of common land and forest resources, maintenance/rehabilitation of village watershed areas, income generation, etc.

2. Issue for area-based development projects:

Project sponsors may want to follow what types of reforms are actually proposed in the final version of the forestry strategy, and possibly enter into policy dialogue about various of those with potential for having direct positive effects in project areas.

2. Points for policy dialogue:

What are the prospects for considering and implementing reforms (such as those listed above) proposed under the new draft forestry strategy?

1.4 Provincial and District Roles

One prominent feature of all of the policies and visions discussed in the above sections is that they all expect major roles to be played by provincial and district-level staff. This trend is common across the MMSEA eco-region, and reflects the general evolution of thought and experience regarding natural resource governance.⁶⁶ In order to develop a bit more coherent picture of the context within which agricultural and land use components of upland zone area development projects (such as those supported by IFAD) are implemented in upland areas of the Lao PDR, it is useful to look at some of the implications of decentralization, and then to some emerging visualization tools.

1.4.1 Decentralization and its implications for provinces and districts

A 2000 high-level government directive⁶⁷ officially redefined central-local relationships by establishing the provinces as strategic planning units, districts as program and project planning and budgeting units, and villages as implementation units.⁶⁸ To give a flavor of the type and extent of responsibilities being placed on provincial and district-level staff, the following list recaps some of the

roles associated with policies discussed in previous sections, along with some observations about progress where they are available:

- **Poverty Eradication.** Under the strategy articulated in the new National Poverty Eradication Programme, provinces will formulate their own 5-year strategic plans and corresponding budgets. Districts will be responsible for formulating, implementing and evaluating their own planning and budgeting process in accordance with their 5-year district socio-economic development plans. Villages are responsible for preparing development plans and plans for revenue collection based on production, as well as for collecting data on socio-economic conditions, classifying populations into 3 relative wealth categories, and monitoring impact of development on household income improvement and poverty reduction.
- **Stabilization of Shifting Cultivation.** Targets, in terms of numbers of villages, have been assigned annually by a national committee and progress is reviewed each year. While numbers have been impressive, there has not been systematic monitoring or assessment of impacts, and anecdotal evidence indicates the effectiveness of these efforts and their impacts on local livelihoods have not always been in resonance with proclaimed objectives. Lack of human and financial resources, together with time pressure have been commonly cited as serious constraints on quality.
- **Land and Forest Allocation.** District officers are assigned primary duties for working directly with villagers to conduct the 8-step participatory land use planning and land allocation process, pursuant to provincial plans and targets from central levels. Again, while their quantitative achievements have been impressive, there is widespread recognition that the quality of the results has seldom been in line with concepts expressed in national policy documents and implementation guidelines. The program is seen to suffer from a lack of qualified staff and budgetary support, and when the process is conducted by poorly trained staff with no technical or financial follow-up support, resulting land and forest use plans have been found to be unsustainable or did not 'stimulate local feelings of control and responsibility', so that their efforts to reduce shifting cultivation were sometimes not successful.⁶⁹ Various pilot projects continue to try to improve the process and provide examples that can help clarify why and how the process can be more effectively conducted.⁷⁰
- **Elimination of Opium Production.** Provincial Committees for Drug Control (PCDCs) have duties to collaborate with the national committee in planning, setting targets and implementing activities aimed at reducing opium production, often in association with 'alternative development' projects active in their provinces.
- **Focal Sites, Village Relocation and Consolidation.** Provinces are to cooperate with district offices in identifying sites, proposing and implementing plans, and meeting targets. A 1998 review found that village participation did not appear to have been very convincing, and proposed projects were too similar to have been a reflection of the particular local realities of the focal sites. A further assessment in 2001 indicated focal site selection had been biased toward poor and politically important areas, with insufficient emphasis on potential areas for development, that leading committee roles were still unclear, that monitoring and evaluation systems were still not in place, that clear operational targets were needed for disbursement and monitoring, and that staff capacity at provincial levels still needed substantial strengthening. Given the importance of this approach, however, the government is continuing efforts to improve the process. One strategic example is the use of statistical and participatory poverty assessments to verify poverty program target districts⁷¹, but capacity building remains a major challenge.
- **Integrated Watershed Management.** All provinces are to develop overall strategies and priorities for sub-watersheds covered by the province, and all districts are to develop watershed plans either by themselves or together with neighboring districts, depending on the biophysical boundaries of the watershed. The 7-step IWM planning process distinguishes between the provincial level, where ranking of sub-watersheds and strategic options for a large watershed should be identified, and the district level where watershed zonation, more specific interventions in development, buffer zone and conservation areas should be discussed and agreed upon by district sub-sectors.

The challenge is now to develop staff capacities in basic, technical and facilitation skills to support nationwide integrated watershed management planning.⁷²

- ***Agricultural Planning and Agro-Ecological Zoning.*** In order to help implement the farming systems-oriented approach outlined in the strategic vision for the agricultural sector, provinces are encouraged as part of their agricultural planning processes to collaborate with districts and central government resources in delineating major farming system zones within their jurisdictions, and use them as a basis for their planning and implementation.
- ***Demand-Driven Agricultural Extension and Research Support.*** District Agriculture and Forestry Office (DAFO) staff are to become general farming systems extension workers with primary responsibility for regular interaction with local communities, farmers and village volunteer workers and understanding their self-expressed needs. Staff in the Provincial Agriculture and Forestry Office (PAFO) are to serve as Subject Matter Specialists, providing technical capacity at the provincial level in order to respond to the needs of district extension workers; specialties will vary with the characteristics and needs of the province. The central level NAFES and NAFRI institutions will be responsive to provincial needs, and will provide national focus for adaptive research and extension support services.
- ***Production Forestry.*** For production forestry, PAFO, together with local authorities, are to carry out field surveys needed for plan formulation and to guide, monitor and control implementation. DAFOs are responsible for organizing district Forest Management Units (FMU) to implement plans. The role of Village Forestry Organizations (VFOs) is to organize villager participation in implementation under a Village Forest Management Agreement (VFMA) signed between the VFO and local FMU. This agreement specifies rights and responsibilities of signatories, scope of village participation, and revenue sharing arrangements. Activities are subject to additional MAF technical regulations, codes and best practices, which are still evolving. While villager participation in forest management has been successfully demonstrated in some projects, implementation efforts in other areas suffer from a need for more capacity at DAFO, PAFO and DOF levels, poor availability of data and information, insufficient enforcement and compliance, and poor monitoring and control mechanisms.⁷³

This list is already quite daunting, especially when one considers the human and financial resources available. Informal MAF discussion documents appear to be very consistent with information gathered during this study in making the following points:

- The principle weakness of the rural development process in Lao PDR has been institutional proliferation and lack of adequate coordination of agencies with vital roles in rural development. The process has been generally top down with perfunctory attention given to local participation and beneficiary consultation. The creation of the former NLCRD was an attempt to rectify these systemic weaknesses, but failed to achieve the necessary coordination required and to mobilize adequate funding to support focal site development. Realizing that rural development could not succeed in its previous hierarchical modality, the Government has shifted its emphasis to a more decentralized bottom-up approach. The paradigm shift from centralized to decentralized rural development planning and management responsibility is a conceptual watershed as it transferred responsibility, if not yet full authority, for development to local communities under the guiding hand of the district administrations. Decentralization has major implications for project design and administration. A S.W.O.T analysis of institutional strengths and weaknesses showed that institutional capacity declines exponentially at each progressive decent down the administrative ladder of government. While institutional weaknesses exist at all levels, years of institutional strengthening projects in the central level of government has achieved significant gains in national capacity building of the central government. Major institutional weakness, however, continues to plague the lower echelons of government from province down to district and villages.
- The main institutional weaknesses inhibiting decentralization are (i) lack of skills; (ii) lack of logistical support due to financial resource constraints; and (iii) lack of motivation, also related to financial resource constraints, because of low salaries and inadequate incentive for field travel.

- The institutional implications for future projects are that decentralisation will delay project implementation because of the precedent requirements to build institutional capacities, particularly at district and village levels, before community development planning and implementation can proceed. These inevitable delays suggest the need for longer, rather than shorter, project time lines to allow sufficient time for the local institutional strengthening before the full pace of development can gather momentum.

It is very encouraging to see that these problems are recognized at high government levels, and that substantial progress is being made in various provincial-level efforts to begin bringing increased coherence through their planning efforts. One quite interesting example is the provincial agricultural development strategy for Xieng Khouang Province⁷⁴, and the associated action plan⁷⁵ being developed for the IFAD-funded project located there. These plans employ agro-ecological and broad farming system concepts, and integrate consideration of several, if not yet all, of the above areas of activity. An important challenge still remains, however, for developing local institutional and staff capacity to effectively refine and implement these plans in a truly participatory manner.

3. Issue for area-based development projects:

Due to the multiplicity of directions and programs, and pressure on district and provincial authorities to comply with superficial targets, there is a need for unity (or at least harmony), clarity, and more appropriate measures of achieving land use zoning and tenure security in a coherent and more participatory and effective manner. This must be achieved before effective agricultural development can be expected to take place.

3. Points for policy dialogue:

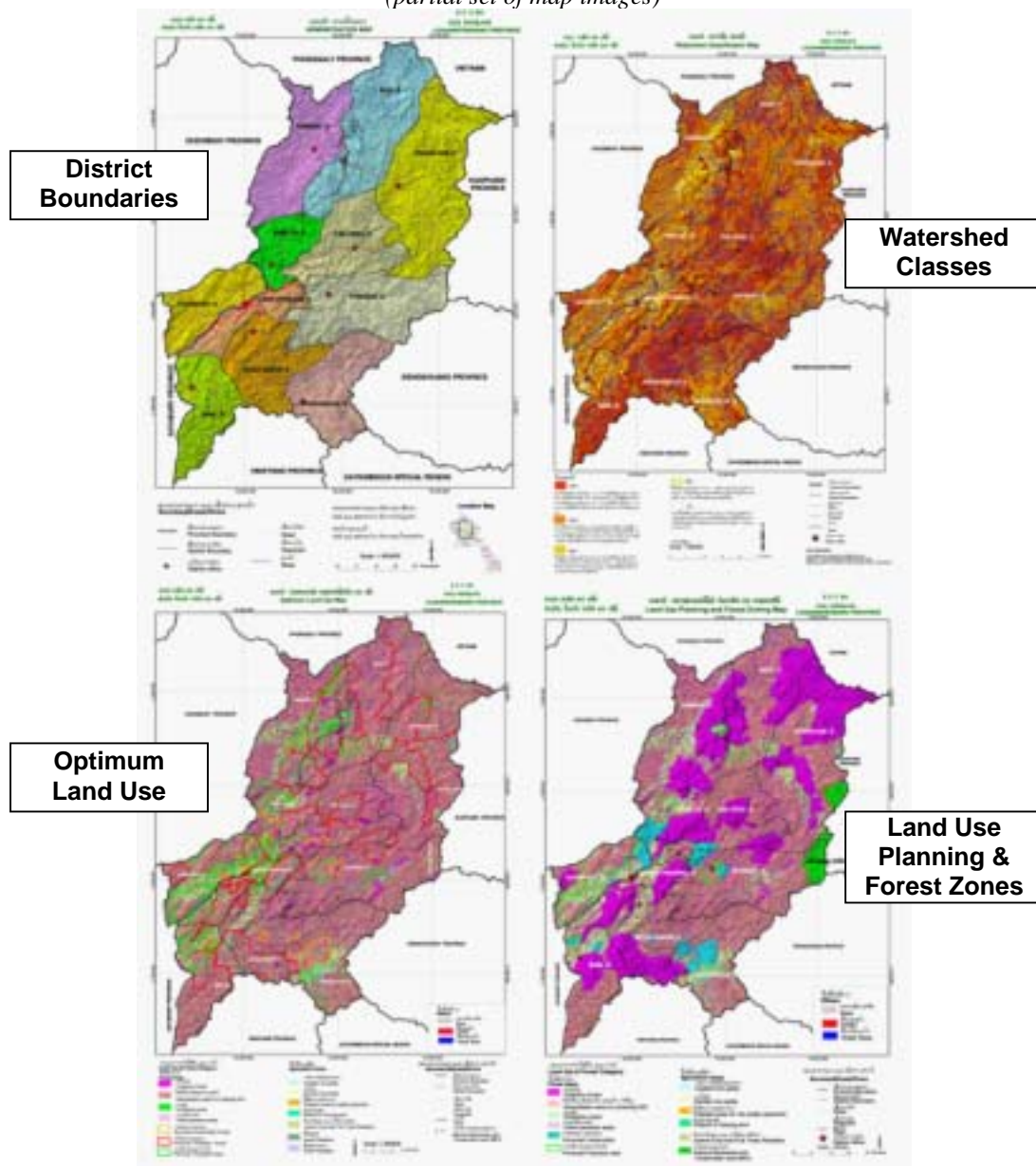
How can there be more coordination of policies and programs that would allow a unified and more effective implementation process for upland land use zoning, planning, and tenurial allocations at village, district and provincial levels? Is it the intention of the government to use the Integrated Watershed Management approach to help achieve this?

1.4.2 Emerging Visualization Tools

All of the policies and strategic visions discussed in this report utilize notions of natural resource characteristics and land use zoning and planning that require comprehension of the nature of broad landscapes in provinces and districts. Capacity is now emerging within various units of the central government to employ tools such as geographic information systems (GIS) to provide spatial data that can assist provinces and districts to see more clearly these broad landscape characteristics. As an example, a sub-set of map images generated at NAFRI for Luang Prabang Province can be seen in Figure 11.

So far, map images such as these are primarily being used to communicate data, information and land use visions available at the central level for consideration in provincial and district level processes. But as capacity to work with this type of information builds at agencies within Luang Prabang (and other provinces), spatial tools can become a valuable asset in providing more effective multi-directional flow of information about land use and natural resource management among levels and sectors that are stakeholders in formulating, implementing and monitoring the various policies and programs that strongly affect land use opportunities and constraints in upland zones. Some pilot projects are already beginning to build basic capacity for such work at provincial levels.⁷⁶

Figure 11. Policy Perceptions for Participatory Planning in Luang Prabang Province
(partial set of map images)



Source: NAFRI

4. Issue for area-based development projects:

Can area-based projects help build capacity to work with tools like simple spatial information systems at provincial levels, in a manner that has practical and useful applications that are functionally linked through multi-directional information flow with district and central government levels?

4. Points for policy dialogue:

Can there be a clear mandate for use of tools like simple spatial information systems to facilitate multi-directional information flow in order to be consistent with participatory bottom-up processes, as well as to facilitate development and implementation of the integrated watershed management approach? If so, how can effective linkages with pilot efforts be established?

2 Implications for Upland Communities and their Livelihoods

This section seeks to help clarify implications of the various policies, strategic visions and programs discussed in section 1 on upland communities and their livelihoods.

2.1 Programmatic Quest for Holistic Rapid Livelihood Transformation

Most recent documents associated with the policies and strategic visions discussed in this report include very considerable effort to embrace holistic views and concern about how to transform livelihoods of poor villagers, who are especially prominent in upland zones. At the risk of imposing some of my own notions on the concepts articulated in those documents and the various studies reviewed in preparing this report, this section seeks to synthesize some common strands that run through these materials.

Household Livelihood System Domain.

At a very broad level, household livelihood domains can be seen as centered on their most basic resource – household labor, which is used here as a shorthand term for what might more appropriately be called human resources, since it includes attributes like knowledge, skill, health, etc. Thus, one of the most basic issues that a household must face in its livelihood strategy is how to allocate its human resources among the livelihood opportunities that are available.

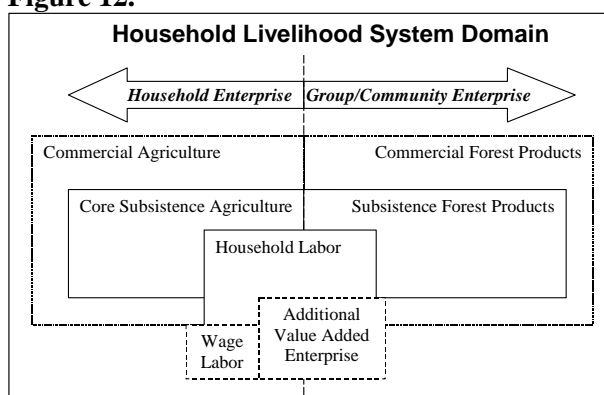
The basic set of generic opportunities are depicted in Figure 12, and include those that are either land-based or non-land-based. Land-based alternatives are then broken down into those within the ‘subsistence core’ or those that are centered on ‘commercial’ production (if available). Both types can be based either within household enterprise or within group or community enterprise, depending on the type of land use and management operations involved. It may be worth noting that subsistence core enterprise may be able to produce a surplus that can be bartered, sold or given away; the difference is that commercially-centered enterprise is directed primarily toward sales, and usually any production surplus that cannot be sold cannot be used directly to meet household subsistence needs. Non-land-based opportunities include wage labor for others (in cash or kind, if available), or participation in additional value added enterprise that may be primarily managed by the household or by a larger group or community.

Descriptions of the more traditional forms of ‘farming systems’ found in policies, strategic visions and some studies, generally recognize that human resources are allocated to a mix of these opportunities, and even in remote subsistence-oriented settings, there is usually a mix among agricultural and forest products. Indeed, shifting cultivation systems utilize forest regeneration to maintain their productivity, and there is often considerable ambiguity about whether products obtained from fallow fields are agricultural or forest in nature. Even the new draft forestry strategy notes that:

Especially in upland zones, people are directly dependent on neighboring forests for subsistence and for generation of meager but vital income. The benefits derived from forests include wood for house construction, food and fuel for domestic needs, cash income from NTFP sales, wages for commercial forestry activities, land for cropping, shifting cultivation and tree planting or regeneration, and inputs for cropping and livestock raising. Proceeds from NTFP sales alone may account for more than a third of village cash income, rising to more than half in forest-rich areas. At the national level, it has been estimated that NTFPs are worth some US\$320 per household per year in rural areas.⁷⁷

Similarly, livestock is an important component of many more traditional ‘farming systems’, and sources of feed and fodder are often from a seasonal mix of agricultural and forest sources.

Figure 12.



The primary thrust of government policy for upland areas is to seek a transformation of livelihoods that would result in increasing allocation of household human resources to commercial enterprise components. At the same time, however, there does appear to be at least partial recognition that basic food security needs to be improved, and that transformational processes must build incrementally on what exists. As people actually working in villages have come to realize, this means we must begin with exploration of current systems and how they work.

Core Subsistence Portfolio. In order to further explore the inner workings of core subsistence enterprise in more traditionally-oriented upland land-based enterprise (or ‘farming systems’), Figure 13 depicts the major ‘portfolio options’ for core subsistence enterprise. Major options include upland fields (*hai* - in which several management options are listed), paddy fields (*na* - if available), various types of homegardens (*suan*), small and large livestock, hunting and fishing, and NTFPs. Households choose how to allocate their resources (labor and knowledge, land, inputs) among these options, depending on the access, productivity, risk and other important characteristics associated with each, as well as on their perceived needs, preferences, and opportunity costs. Outputs from the system can meet their immediate subsistence needs or go to reserves, and any surplus can be traded or sold (if possible) to help meet subsistence, savings or capital investment needs.

The manner in which outputs from the core subsistence enterprise portfolio contribute to supply of household basic needs, such as those recognized in poverty assessments, are depicted in Figure 14, which was kindly provided by Dr. John Raintree.

As local households, lineages, and communities continue to engage in various types of component enterprise over the years and through generations, they build their knowledge base about the lands, crops, wild plants, and animals within their management and production domain. This familiarity with how plants and animals prosper or suffer under the range of conditions found in local domains is an important input into their agroecosystem management practices, and a major resource for further transformations.

Homegardens are often a rich repository of germplasm, knowledge and familiarity that can be easily underestimated or overlooked. Indeed, homegardens in this region can have a variety of forms, which can vary by season and other conditions. While there may be components planted around the house, there may also be plantings in or near upland fields or paddy fields, in nearby forest areas, or near water resources during dry seasons. They are often quite diverse plantings – to meet a variety of

Figure 13. Household Core Subsistence Portfolio

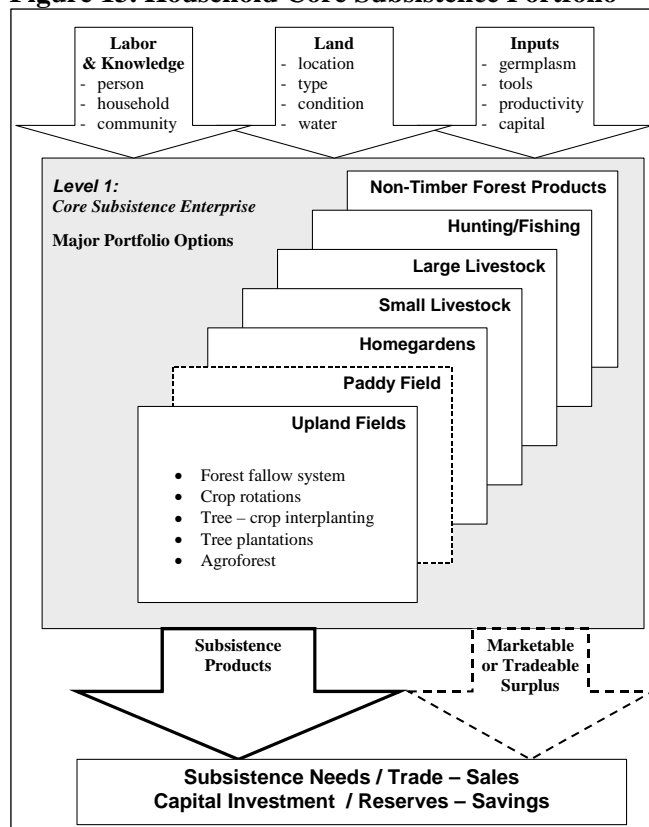


Figure 14.

HOUSEHOLD LIVELIHOOD SYSTEM	
BASIC NEEDS SUPPLY SYSTEMS	PRODUCTION SUBSYSTEMS (Components of Basic Needs Subsystems)
<i>Direct Needs (outputs consumed directly by the household)</i>	
• FOOD	← Crops, livestock, fish, NTFPs, purchased foods
• ENERGY	← Firewood from forests & fallows, crop residues, etc.
• SHELTER	← Timber, NTFPs, purchased
• MEDICINE	← Medicinal plants, purchased medicines
• CASH	← Short term cash crops, livestock, NTFPs, cottage industries +
• SAVINGS/INVESTMENT	← Long term savings/investments in livestock, trees, banks, farm improvements +
<i>Indirect Needs (major inputs for producing outputs that are consumed by the household)</i>	
• FEED FOR LIVESTOCK	← Grasses, forage, crop residues, feed crops
• RAW MATERIAL FOR COTTAGE INDUSTRY	← NTFPs, timber, crops, purchased materials

Source: John Raintree. Socio-economics Unit. LSUARFP. NAFRI

nutritional, herbal, medicinal and even aesthetic or spiritual needs – that often include an eclectic mix of exotic and domesticated species. They also frequently serve as an ‘incubator’ where newly acquired species (from outside sources or from the forest) are planted for close observation so that people can become more familiar with the plants and evaluate their potential for more permanent inclusion in their enterprise portfolio. Thus, they also serve as a pool of plants, knowledge and experience that can provide a foundation for rapid expansion of selected species into larger commercial plantings, if and when reliable marketing opportunities emerge.

Knowledge (often extensive) of wild species found in local fallows, forests, and aquatic resources, and how they can be used for human benefit, is another important resource in livelihood strategies, which complements knowledge of domesticated species. Indeed, together they provide the basis for domestication processes that help villagers adapt their livelihood strategies as conditions fluctuate and needs change.

Livestock are yet another important livelihood component, that can serve as a source of food or draft power, as well as a growing store of wealth that provides status and can be mobilized when needs for cash, trade, dowries, etc. emerge. Moreover, traditional sources of food for livestock are usually from agricultural residues, scraps, or wild or volunteer plant sources, so that they can often pass across the household-community land and domesticated-wildland interfaces as needs, seasons, or opportunities fluctuate or change. The greatest barriers are often obtaining initial stock (especially for large livestock) and access to a set of feed sources that provide reliable year-round continuity, and the greatest risks are disease, unusual weather events, and theft.

Since upland zone sites for establishment of paddy fields are quite frequently very limited by geographical characteristics, it is the upland field component (*hai*) of the core subsistence portfolio that provides the main source of rice – by far the most preferred source of carbohydrate in the diet of upland (and lowland) peoples – often along with a mix of products from other plants mixed into the system. Indeed, villagers and the government now agree that the degree to which a household is able to meet its own subsistence rice needs is the first indicator of poverty. But since upland rice cannot be grown continuously in the same field for more than 2-3 years without suffering serious yield decline, traditional production technologies have evolved that use ‘sequential agroforestry’ techniques that employ natural forest regeneration processes to maintain productivity without purchased productivity-enhancing chemical inputs. This approach has also been used to produce maize, root or tuber crops, opium or other crops when rice productivity is chronically low due to resource or environmental characteristics, or when needs or opportunities make such crops preferable. Although there is a considerable range in how these types of systems work – which parts of the government have come to recognize – they have generally all been lumped together as ‘shifting cultivation’ systems, and are thus primary targets of the ‘stabilization’-associated policies described in previous sections of this report.

One more component that is not reflected in the above diagrams, is the local social capital required to establish, manage, and further evolve various components of a household portfolio. Two obvious examples are social or kinship networks, and community-level organization and institutions.

It is the overall mix contained in the household enterprise portfolio that reflects their current livelihood strategy. Whenever there is a disturbance or stress – or a new opportunity – that affects any one component, then the overall system seeks to compensate, adapt, or ‘cope’ by readjusting allocations among the various components. Given that disturbances caused by weather, disease and war have come and gone many times in the past, systems tend to have built-in mechanisms to make it through the hard times associated with such events – wild or domesticated ‘famine crops’, or social or kinship networks through which one can obtain emergency assistance, are but two minor examples.

In this sense, many of the government’s policies seek to induce upland households to make major transformations in their portfolio by constraining some components (especially *hai*) and opening new opportunities for others (especially through access to markets and government support services). In the aggregate, this often appears to be resulting in major sustained changes in the overall operating environment, which is causing concern among many about the capacity of households and local communities to make such major adjustments within a comparatively very short period of time. One very interesting example of emerging related lines of activity is a recent study conducted for the NGO

Concern Laos on local coping mechanisms in disaster management, which proposes that such major sustained pressures for rapid change be conceptually treated as an ‘ongoing disaster’ for local livelihood systems.⁷⁸

2.2 Implementation Experience:

Given this framework for examining upland livelihoods, and government policies for inducing land use transformation in the uplands, this section looks at three areas of experience that have emerged from actual efforts to implement associated policies and programs.

2.2.1 Land Use Constraints, Turbulence, and Uncertainty

Most of the policy tools that have been used in attempts by the government to induce transformation of land use and livelihood systems mountain sloping land zones have centered on control of access to land resources. Much of the central focus of these efforts has been on ‘stabilization’ of shifting cultivation, which is condemned from various lines of reasoning, including forest destruction, watershed deterioration, association with opium production, and even ‘backwardness’. Whether one agrees with all these lines of reasoning or not, it is clear from a villager’s point of view that serious efforts are underway to constrain his/her ability to continue *hai*-based land use enterprise as it has been conducted in recent decades. Indeed, at least a substantial percentage appears prepared to accept such changes if it will make their conditions better. Figure 15 summarizes some of the constraints being encountered by agricultural producers in upland zones.

Various of these constraints are also focused on changing settlement patterns and land use arrangements, again with the aim of transforming land use, and integrating villages into national infrastructure and support service systems, as well as the wider market economy. Indeed, there are numerous accounts of recent movement of populations down from sloping areas into roadside settlement areas, indicating the rate and scale of such movement may have accelerated during the last 1-2 years. Although there are still few, if any, monitoring systems to identify, track or facilitate such movements, various government, NGO and technical advisory staff have been observing that in many of these cases there have been few efforts to prepare receiving sites for influx of this scale, resulting in the emergence of a range of issues and problems for both previous and new components of the population in these areas. And, at least in some cases, it is more well-capitalized in-migrating highlanders who appear to have the advantage, resulting in out-migration of the previous midlander occupants.⁷⁹

The land use planning and land allocation (LUP/LA) process is seen by the government as an important tool for reducing the turbulence and uncertainty associated with new land use constraints and reorganized settlement patterns. As we have seen, however, there are still numerous obstacles to its effective implementation as conceived in high-level government policy.

Figure 15. Constraints in Uplands

Competing Non-Agricultural Land Use

- Increase permanent forest cover
- Increase biodiversity conservation areas
- Increase protected watershed areas
- Increase production forest areas

Spatial Organization of Land Use

- Conform to agro-ecological zoning
- Conform to land capability/optimum land use zoning
- Conform to watershed classification and management plans

Agricultural Practices

- Stop shifting cultivation, phase out fallows
- Decrease upland rice
- Stop opium cultivation
- Stop agricultural cultivation on steep slopes
- Increase trees and perennials
- Do not use chemical inputs

Settlement and Land Use Arrangements

- Relocate villages (voluntarily) by enticing them out of remote areas
- Consolidate into larger permanent settlements along access corridors
- Demarcate village boundaries
- Demarcate land use zoning in village areas
- Allocate fixed household land parcels under prescribed limits

5. Issue for area-based development projects:

It will be very difficult to rapidly achieve agricultural development targets in upland areas with high levels of turbulence and uncertainty in land use arrangements. Constraints on land use are clear and numerous, while opportunities tend to be vague, distant, and dependent on major livelihood transformations. Yet these issues cannot be resolved without coherent, participatory processes that can help establish a local vision for land use management built on local knowledge and livelihoods - and reflected in zoning - along with strengthening of the local social capital required to effectively implement the vision.

5. Point for policy dialogue:

While local household and village uncertainty about where and how much land will be available for what types of land use needs to be reduced as quickly as possible, in order for it to be effective and acceptable it must be done through fully participatory processes. How can this be assured during early phases of implementation in project areas?

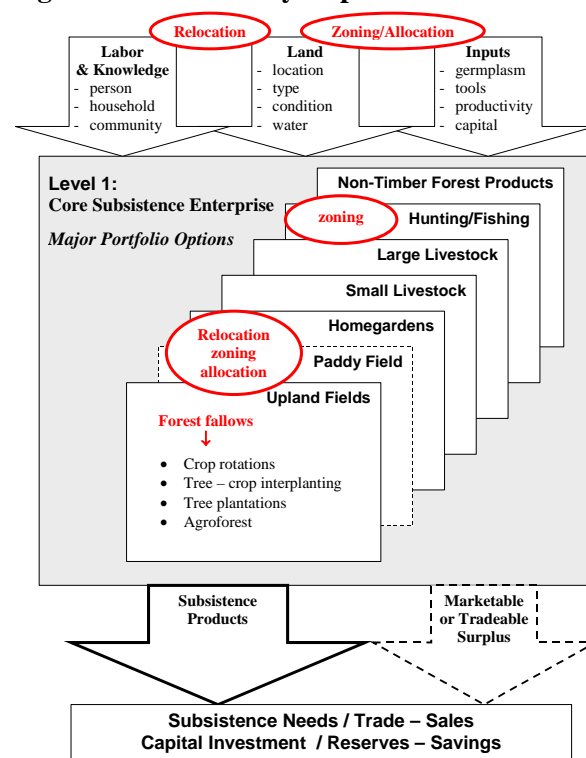
2.2.2 Disruption of core subsistence enterprise

Constraints placed on upland land use affect household livelihoods through their particularly strong impacts on specific components of their core subsistence enterprise portfolio.

Shifting Cultivation Stabilization. The government efforts to ‘stabilize’ shifting cultivation eliminate the forest fallow option from the upland field component, as indicated in Figure 16, thereby limiting that option to the other types of technologies listed. Indeed, one result of the consistent line of policy directed toward ‘stabilization’ of shifting cultivation is that forest fallows have been seen by much of the government as degraded or destroyed forest, rather than as systematic fallows in an agricultural cycle. And, as lands ‘abandoned’ for more than 3 years are subject to reclassification as regeneration forest, this adds further pressure for villagers to not allow forest to regenerate for more than 3 years. In some cases this is then used as evidence that the shifting cultivation system has deteriorated, so that the argument for conversion to ‘permanent’ fields becomes somewhat of a self-fulfilling prophecy. Although more recent policies exhibit more understanding and flexibility, for many it may have already ceased to be an issue.

Zoning. Land use zoning within demarcated village boundaries has the potential for affecting several components of the household core subsistence enterprise portfolio, and effects could be either positive or negative. Perhaps the single most important factor in determining the nature and degree of these impacts is the manner in which the zoning process is conducted. If the step-wise participatory process of village boundary delineation, followed by village land use zoning, and then followed by household land allocation in areas where it is appropriate, then there could even be a net improvement for household enterprise, depending on the nature of the previous state, the

Figure 16. Land Policy Impacts on Household

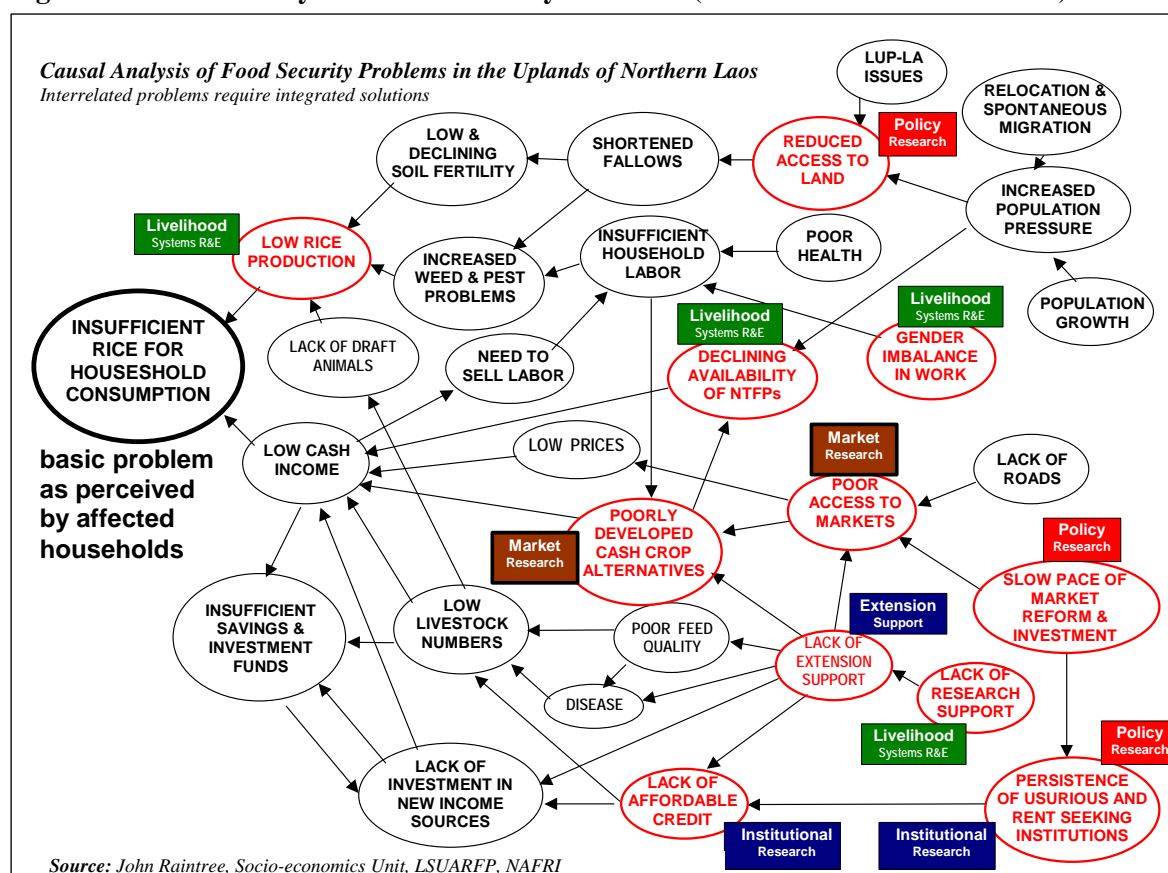


sufficiency of access to household and village lands as zoned, and the degree to which the process helps strengthen village institutions related to land use management.

Relocation. Relocation changes the whole land context of household enterprise, which could be for the better or the worse, but in any event will certainly be different. And where conditions of the new site are substantially different from the old (as in highland-to-lowland relocation, for example), there could also be a strong impact on the relevance of local knowledge – related both to familiarity with the land resource base, and to types of plants and production systems that would be viable options. Major changes in social capital are also likely, which include relationships between new and old households and villages at the receiving site. The other side of the coin, of course, is that new opportunities may also emerge, so that although a major change in livelihood strategy would be required, there could be a net gain in household well-being. This is, of course, what the government hopes will happen.

Impacts on Food Security. Since household food security in the form of self-sufficiency in rice production is a major indicator of poverty for both villagers and the government, the Socio-economics Unit of NAFRI has been working under the LSUARP project to investigate impacts on rice self-sufficiency in research areas where these types of policy-driven disruptions have occurred. One product of their empirical studies has been a causal analysis of food security problems, as depicted in Figure 17. This diagram is potentially very useful in helping communicate the inter-related nature of problems that arise within a household enterprise portfolio. It allows us to see how policy-driven impacts affect the overall production system, for example, and to identify potential areas where response is likely. It also shows how such interrelated problems require integrated solutions, so that a simple ‘quick fix’ scenario is unlikely. The circles in red are areas that villagers have actually identified as problems, and the flag associated with each problem circle indicates the type of research and/or extension response appropriate for the problem.

Figure 17. Causal Analysis of Food Security Problems (NAFRI Socio-economics Unit)



This is a very promising line of work-in-progress, that can help to more effectively target adaptive research and development efforts, and provide useful feedback to policy levels. One hopes it will be further expanded in the future. A few priority areas for expansion might include relationships between livestock and soil fertility, and the role of various types of homegardens. One would also hope that this type of analysis could become part of the toolkit of PAFO/PAFES and DAFO/DAFES efforts to support farming systems development.

6. Issue for area-based development projects:

Agricultural development in most upland areas needs to put first priority on ways to effectively mitigate disruption, increase food security, and build foundations for commercial enterprise through strengthening livestock, garden and NTFP components of core subsistence enterprise.

6. Point for policy dialogue:

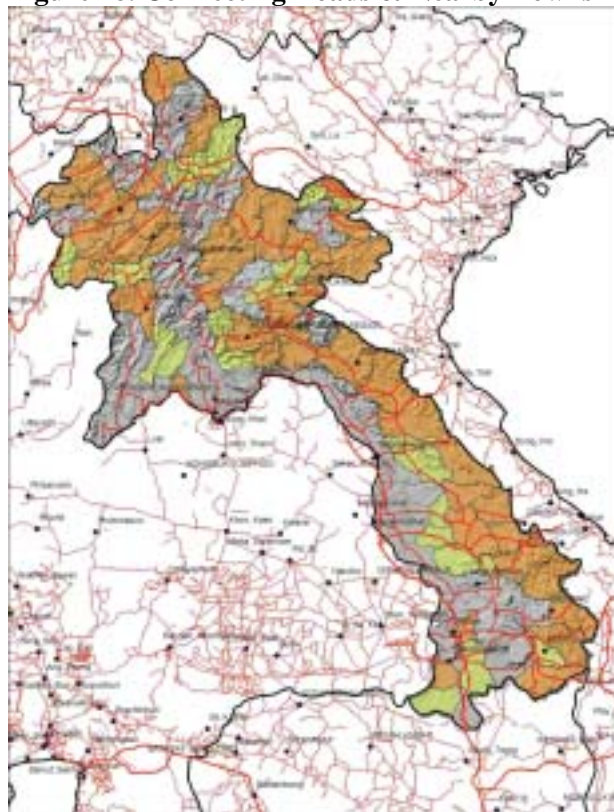
Although recent government documents appear to agree with the need to begin development in upland areas with emphasis on strengthening core components of existing livelihood strategies, it would be useful to have more clarity on this issue, so that appropriate criteria and indicators of progress and impact can be agreed upon by all parties involved

2.2.3 Distant commercial opportunities

Access to commercial markets is a very important component of what the government is promising to villagers who stop shifting cultivation, relocate to access corridors and consolidate if necessary, participate in land use zoning, and comply with the various constraints imposed on their land use practices. Government policy recognizes that commercial production enterprise needs to be an essential element of upland development, and the livelihood alternatives promised by policies and programs are based primarily on production for commercial markets that are to flourish as a result of the road improvement projects being undertaken at various levels around the country, and even at the wider Greater Mekong Sub-region (GMS) level. The major road context is shown in Figure 18.

Reports about how commercial market development is progressing, however, are mixed. One does hear anecdotal evidence that is quite promising, related to examples of households becoming assemblers and traders of agricultural or non-timber forest products, for example, or of the emergence of trucker organizations to service transport needs after roads are improved. Overall, however, markets and marketing are still identified as an important limitation and 'problem' by reports from around mountain area provinces. In short, there appears to be a clear need for substantial action to facilitate development of commercial opportunities for upland areas if the government is to fulfill its promise to upland villagers whose livelihood systems they are seeking to transform.

Figure 18. Connecting Roads & Nearby Towns



Source: ICRAF-NAFRI with road data from SEI & MRC

The Master Plan Study on Integrated Agricultural Development articulated a strategy for marketing and agro-processing development that focuses on (1) road access, (2) market information (or 'intelligence') system, and (3) grading and standards system to enhance marketability and product-unseen trading. While progress is being made on the first of these components, it appears that specific activities to implement the other two components have not yet begun.

Given the constraints being placed on agricultural production in upland areas, the nature of the livelihood systems upon which any transformations need to build, and consideration of the relative comparative advantages that the Lao PDR faces vis-à-vis neighboring countries in the context of liberalized trading arrangements, current thinking about upland production systems as expressed in informal MAF discussion documents express the view that Laos does not enjoy competitive advantage with the countries for large quantities major agricultural field crops. Thus, in order to stimulate growth in agriculture and raise rural incomes, an opportunity is seen for efforts to move beyond subsistence farming to more diversified, commercial agricultural production. With two of the country's neighbors, Viet Nam and Thailand, being dominant low-cost rice producers in the international market, this view sees the competitive advantage of the Lao PDR to be in non-rice *niche market* development in both regional and wider international markets. Products of upland household livelihood systems suitable for niche markets where Laos appears to enjoy competitive advantage include: (i) NTFPs⁸⁰ and agro-forestry products such as benzoin, cardamom, and paper mulberry; (ii) organically-farmed produce, particularly vegetables, dried bananas, peanuts, sesame and animal feed products in border areas; (iii) handicrafts and; (iii) and livestock. Overall, all of these niche market items, when properly graded, sorted, packaged and transported to continuous regional markets, are seen as having the potential to make a major impact on improving household productivity and income.

If these are indeed the types of alternatives that are being offered to upland households and communities, then there are some fairly important implications for how marketing, extension and research activities should proceed. In particular, there needs to be concerted effort to explore the markets for these types of products, and especially how the capacity and requirements of those markets match with current and potential production capacities and abilities. Moreover, adaptive research and extension service systems need to understand these directions and develop their capacities to provide meaningful and timely support services.

7. Issues for area-based development projects:

High priority needs to be assigned to identifying existing and potentially important markets, assessing demand for relevant crops and products, and fostering entrepreneurship among farmers, local traders and processors

Serious market study needs to be conducted sooner, rather than later, so that it can help inform and direct adaptive research and extension support service activities.

Mechanisms need to be developed for open, transparent, multi-sector efforts to foster commercial enterprise, markets, and entrepreneurial activity at village, district and provincial levels. It may also be helpful to have a focal point for those with product ideas who are seeking markets, as well as for people from outside markets seeking information on local capacities to produce for those markets.

7. Points for policy dialogue:

How and when will the government establish means for seriously analyzing markets and launching information services? Who is responsible, and what approaches are being used, to develop markets and foster entrepreneurship at village, district and provincial levels?

How can urgent needs for market analysis and development best be met in districts and provinces with active area-based development projects, in a manner that will be able to respond to continuing change in conditions after the project ends?

What are current arrangements and visions for coordinating multi-sector (including private sector) efforts to develop markets and commercial production capacity? How can area development projects link with these efforts and help develop capacity in project areas?

2.2.4 Weakness of institutional support

Access to agricultural support services is another key component of what is being promised to upland households and communities who transform their livelihoods in accordance with government policies. Everyone talks about the key importance of government officers at provincial – and especially district – levels, and virtually all policies and programs recognized the urgent need to build capacity at these levels in order to properly implement the programs they are focused on at the time. There are also frequent references to the need for central government institutions to provide responsive and timely support to provinces and districts needing their input or assistance.

Thus, in line with the mandate of this report, the following two sections take a closer look at efforts to develop institutional support for agricultural technology generation, and for agricultural ‘extension and dissemination’ services. There are, of course, a range of additional services, including informal and micro-finance, education, health and others that are important, but beyond the scope of this report.

8. Issue for area-based development projects:

Area development projects need to be considered as an opportunity to strengthen emerging institutions and support systems in their project districts and provinces, including their linkages with national systems, and provide an example of how they can be made to work effectively. This supports arguments for having project management units that are embedded within district and provincial operations, rather than separate independent units.

8. Point for policy dialogue:

How can management of area development projects be best embedded within district and provincial operations so that they can function effectively while building capacity to provide continuing support services after the project ends?

3 Availability of Agricultural Technologies

There is a modern myth frequently encountered in international development organizations that somewhere there is a repository of ‘proven’ (and often ‘simple’) agricultural technologies that can just be taken ‘off the shelf’ for implementation. Especially for situations such as development of livelihoods in the ecologically and ethnically complex upland areas of the Lao PDR, this is at best a partial-truth, and in most cases simply not in line with reality. Ad hoc project efforts to initiate production of one commodity or another, using crop technologies from the lowlands or imported from projects or production regimes elsewhere, while occasionally showing a burst of energy while project subsidies remain in place, have very seldom resulted in widespread adoption that can survive after the end of a project. As we saw in the conclusion of John Raintree’s causal analysis of food security problems (Figure 17, above), complex problems require integrated solutions. Moreover, it is always useful to remember that if it was easy and simple, it would have already been done!

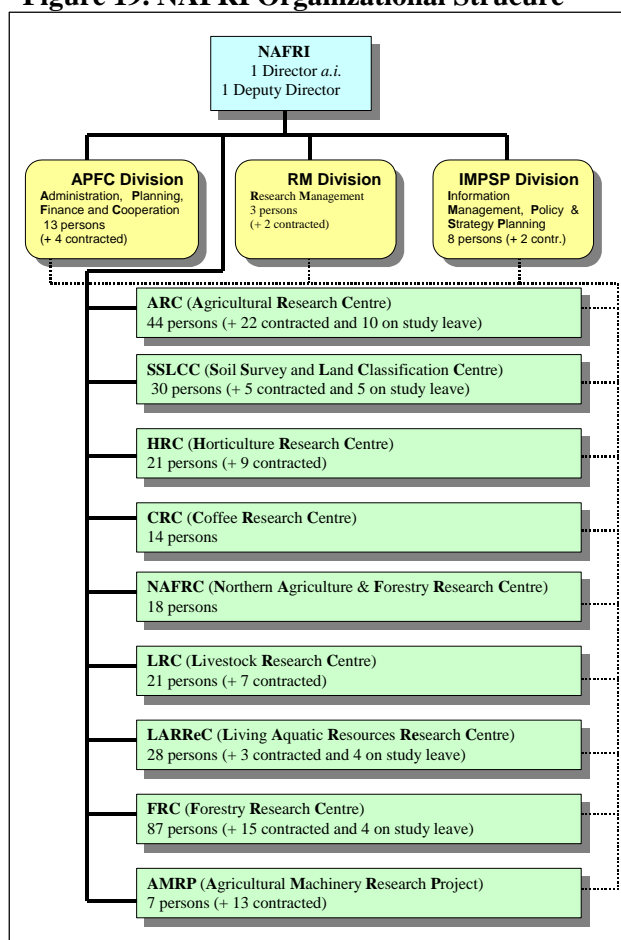
Recognizing these issues in its strategic vision for the agricultural sector, the Lao government reorganized its Ministry of Agriculture and Forestry (Figure 5, above) in an effort to ‘harmonize’ efforts to develop and adapt agricultural research and extension systems that could better support the livelihood transformations it is seeking to induce in rural areas, and especially in upland areas. This section examines the research side of these efforts and briefly reviews the status of technology development for what is seen as priority needs for upland areas.

3.1 Emerging National Institutions & Systems for Problem-Solving Adaptive Research

The National Agriculture and Forestry Research Institute (NAFRI) was established in 1999⁸¹ in an effort to consolidate, systematize, and coordinate a more coherent and problem-solving approach to adaptive research by units within the Ministry of Agriculture and Forestry.⁸² While it is still a very young institution, composed largely of research centers formerly associated with sub-sector oriented line agencies, it is the largest single unit within the Ministry, and it is making substantial efforts to achieve its mandates. The position of NAFRI within the Ministry of Agriculture and Forestry is seen in Figure 5, and the organizational structure of NAFRI itself is shown in Figure 19.

NAFRI is mandated to coordinate and conduct adaptive research programs as an integral part of a demand-driven research and extension system that supports local people’s active involvement in their own development. Building on the vision of the agricultural sector⁸³ and subsequent efforts⁸⁴, a NAFRI research strategy for 2001-2005 and vision to 2010 has been articulated⁸⁵, which places primary emphasis on adaptive research aimed at overcoming specific problems limiting production and causing degradation of natural resources within different agro-ecological zones.

Figure 19. NAFRI Organizational Structure



NAFRI is currently developing a farming systems research (FSR) approach to plan and coordinate the activities of its various research centers, integrated at the top conceptual level with a watershed perspective in the physical landscape, and a livelihood perspective in human dimensions. As a complement to strategies being articulated for various component elements NAFRI⁸⁶, an overall human resources strategy has also been developed to seek systematic strengthening of its capacity during the next few years.⁸⁷

Thus, NAFRI is seeking to develop its national R&D leadership and capacity to provide responsive support to DAFO and PAFO needs through adaptive research on farming systems, socio-economic dimensions (through a Socio-economics Unit⁸⁸ established within the IMPSP Division), and land management issues (through a program based in the SSLCC Center), that help strengthen and support efforts by its constituent research centers that are focused on crops, horticulture, livestock, forestry, fisheries, etc. As part of this process, it also serves as the main focal point for collaboration with international research centers such as those operating under the CGIAR (currently IRRI, CIAT, ICRAF, IWMI, CIP), as well as other advanced research institutes (ARI) elsewhere in the world, such as CIRAD, ACIAR, etc. CIAT has even established its Southeast Asia regional office at the main NAFRI campus.

In order to help build the capacity of NAFRI, the Lao-Swedish Upland Agriculture and Forestry Research Project (LSUARP)⁸⁹ is assisting NAFRI to explore ways to implement its strategy. Key program components include:

- (1) farming systems research/extension⁹⁰, aimed at formulating and implementing a farming systems approach that coordinates and integrates complementary lines of technology development aimed at improving rural livelihoods, including working linkages with the emerging extensions network.
- (2) socio-economics, aimed at analysis of key elements of the complex web of issues associated with livelihood changes, increased income from agriculture and forestry, agricultural intensification in agro-ecological zones, commercial market opportunities and constraints, group learning and collective action at village levels, and other such issues.⁹¹
- (3) forestry, aimed especially at agroforestry, NTFPs, joint forest management, regeneration of forest in protected areas, and the range of associated issues discussed in the new forestry sector strategy.⁹²
- (4) land management, aimed at land classification and zoning, including the development and testing of procedures, methods and tools for conducting participatory land use planning and land allocation at village level.
- (5) information, aimed at increasing quality and quantity of the flow of information related to development, adaptation and dissemination of agricultural and forestry technologies.

NAFRI, MAF, and the Lao PDR government more generally, recognize that – with the possible exceptions of lowland paddy rice and livestock health – there has not yet been a large flow of practical information on agricultural technology from government institutions to districts, provinces and area development projects. What they are trying to make clear, however, is that they are seriously working to strengthen the capacity of institutions that have been assigned responsibility for these functions, and that they anticipate the flow and quality of such information will be increasing rapidly. At the same time, however, efforts by central government agencies cannot go very far in implementing the adaptive research components of a responsive, demand-driven agricultural support service system without close collaboration from provincial and district levels. Thus, there appears to be substantial scope for development of closer collaborative relationships with area-based development projects that are implemented through emerging support service institutions, with the intention of strengthening their capacity in project areas, including their functional linkages with other levels.

9. Issues for area-based development projects:

How can districts and provinces with area-based development projects best access available information and government technical assistance, during project design and start-up, as well as on a continuing basis in a manner that will be sustainable after the project ends?

How can experience under area-based projects best contribute to (1) building the national technology knowledgebase; (2) the search for information and experience with relevant technologies; (3) documenting and exchanging experimental and trial results?

Would it be possible for area-based projects to support development of sites within their project areas to become additional sites for emerging adaptive research conducted by the NAFRI network?

9. Point for policy dialogue:

How can area development projects increase input and technical assistance from NAFRI in project design, and in support for strengthening provincial and district agricultural development strategies and plans, including advice on how to strengthen institutional interactions among local to national levels?

3.2 Priority Technology Needs in Upland Areas

Recent informal MAF discussion documents express the view that agricultural technology development should target upland livelihood systems, and suggest that first priority should be on rice intensification for household safety nets, followed by livestock, agro-forestry and cash crops, NTFPs and community based natural resource management. Particularly under the types of conditions that prevail in the Lao PDR, the process of adaptive research needs to make efficient use of scarce human resources, and access as many useful sources of information as possible. It is particularly important that linkages are established so that information and experience on technology identification, selection and adaptation can be exchanged from local to national levels, as well as among government sectors and between public and private sectors. The following discussion seeks to take a brief look at the areas suggested as high priorities, in order to assess accomplishments of lines of research activity, as well as the types of activities currently in process or under development, and to identify a few gaps for further attention.

3.2.1 Rice intensification for household safety nets

Rice is clearly the most important aspect of food security, whether viewed from a national or a villager point of view. The Lao-IRRI Rice Research and Training Project (LIRRTP) has been actively supporting development of the Lao National Rice Research Program (NRRP) since 1991, with funding support provided primarily by the Swiss Agency for Development and Cooperation (SDC). This has become the most advanced agricultural R&D program in the country, and has helped the Lao PDR achieve rice self-sufficiency at the national level. In the process, it has developed very substantial research and training capacity, made very extensive collections of rice genetic material that included a major contribution to global rice germplasm banks⁹³, and has developed a number of new cultivars in and for the Lao PDR.⁹⁴ A resource book on soil fertility management in lowland rice for those working with lowland rice farmers in research, extension and development has also been produced.⁹⁵ Indeed, the NRRP has advanced to the point that the 5th phase of the LIRRTP will focus on phasing out IRRI resident international staff presence in the Lao PDR.⁹⁶

Emphasis in this work has been, of course, on lowland paddy rice, for which cultivars, methodologies, trainers, and training materials are all available. This is a primary reason why production and distribution of improved paddy rice seed is seen as one of the available agricultural technologies that has potential for high return, quick yielding development activities.⁹⁷ For area development projects, the remaining challenge is how to make an appropriate and functional link with NRRP expertise that can help establish appropriate processes in project areas.

Although it has received a much lower priority, there has also been research conducted on upland rice systems in mountain areas, particularly in Luang Prabang province.⁹⁸ Indeed, the early work by Walter Roder and several Lao colleagues has made major contributions to improved understanding of traditional and transitional upland rice shifting cultivation systems in the wider MMSEA region; this work has been recently collected in a volume published by IRRI.⁹⁹ Some of Roder's conclusions added to this recent compilation are worth noting here:

Change in land-use practices would require that slash-and-burn households (1) produce their food requirements using different production technologies, (2) change their food habits, or (3) produce products sold outside the rural economy. Research efforts by the Lao-IRRI project spanning more than a decade have not identified realistic technologies to change the production technologies for rice production in upland environments given their socioeconomic circumstances. As long as rice production for home consumption remains the main objective, Lao slash-and-burn farmers will have only limited options to change their land-use practices.

The biophysical and socioeconomic environment in the Lao uplands is extremely heterogeneous. This paradoxical situation, with limited resources for research in a highly heterogeneous environment, requires rigorous priority setting. In spite of the wide range of conditions, many problems are universal, such as access to resources, access to markets, the challenge to change from slash-and-burn to mulching, and optimizing synergistic effects from integrating livestock and leguminous fallow/fodder species.¹⁰⁰

His successor, Keith Fahrney also made these recommendations for future research focusing on rice production systems:

Options are limited to increase rice production or labor productivity for rice production in the upland environment. Furthermore, in an evolving market-oriented system, rice will play a minor role at best and research on rice variety improvement, agronomy, or weed and pest management will yield limited benefits. Considering the limited resources, rice-related work should be limited. Improvements to rice-based systems such as increased rice yield and increased labor productivity will accrue through the incorporation of other components (especially forage/livestock rotations).¹⁰¹

Nevertheless, IRRI is now in the process of submitting a full proposal to the global Food and Water Challenge Program for a project that would include collaboration with NAFRI (as well as ICRAF and others), in association with the IRRI-led Consortium on Unfavorable Rice Environments that – if funded – would seek to identify improvements in rice production for both small pockets of paddy and upland rice systems in mountain area watersheds of Laos and Vietnam.

10. Issues for area-based development projects:

Since paddy rice is potentially one of the quickest-payoff agricultural technologies available, and since small-scale irrigation systems in small upland valleys are often a component of area-based projects, rice production trials, demonstrations and seed multiplication at these sites should be one of the first priority agricultural development activities.

In areas where paddies are clearly insufficient, and reliable cash crop options are not yet developed, how much priority should be assigned to upland rice improvement?

10. Points for policy dialogue:

How can districts and provinces with area-based projects best access germplasm, knowledge, experience and training capacity of the National Rice Research Program to establish trials, demonstrations, and seed multiplication operations in appropriate areas? How can small-scale irrigation development in small upland valleys receive higher priority?

Given the importance of rice self-sufficiency in poverty reduction, what is the government's policy about upland rice improvement in areas with insufficient paddy? Does the National Rice Research Program have a mandate to conduct work on upland rice improvement?

3.2.2 Livestock

Another area of relative strength in the Lao research and development system is in livestock health programs, making this the second area with potential for high return-quick yielding development activities.¹⁰² The EU-funded Strengthening of Livestock Services and Extension Activities Project is helping establish an animal health information system, improving vaccine production facilities and diagnostic laboratory, and improving extension and field services. Livestock nutrition and selection/breeding program are obvious potentially complementary lines of work that are also mandated for research under the NAFRI umbrella. IFAD and various other area-based projects already have experience in how to access assistance in developing these lines of activity.

In upland areas, livestock have long been an important part of agroecosystems, and there has been a considerable amount of analysis directed toward their role and potential pathways for development. ACIAR published a quite noteworthy collection of relevant materials from a major international workshop organized in Vientiane shortly before NAFRI was established.¹⁰³ All major strategy documents place a high priority on livestock and forage development in the uplands, with particular interest in integrated livestock-agroforestry systems.¹⁰⁴

Under one important line of work on these issues, improved fallows¹⁰⁵ and other niches¹⁰⁶ for forages in upland landscapes of northern Laos have been the subject of substantial research and pilot project development during recent years, under the Forages for Smallholders Project (FSP) managed by CIAT and CSIRO, with financial support from AusAid. The focus of the project is to develop forage technologies in partnership with smallholder farmers in upland areas, where forages have potential to improve livestock feeding and management of natural resources. It operates through a network of smallholder farmers, development workers and researchers in Indonesia, Lao PDR, Malaysia, Philippines, Thailand, Vietnam and southern China. Work in the Lao PDR already includes pilot sites in several northern provinces, including Xieng Khouang, through which linkages with IFAD supported projects could be established if they are not already in place. Two practical booklets have already been published in multiple languages, including Lao¹⁰⁷, and a third is available in English from their website and should be published soon.¹⁰⁸

3.2.3 Agroforestry and Cash Crops

As this seems to be a quite broad and nebulous category in the government's priority list, this section begins with a brief background discussion of agroforestry, followed by a bit of disaggregation.

General Agroforestry. Recent-era research on swidden agroecosystems and upland farming systems conducted through collaboration between the Ministry of Agriculture and Forestry and international researchers began increasing around 1991, with studies conducted in collaboration with the Southeast Asian Universities Agroecosystems Network (SUAN)¹⁰⁹, following earlier workshops in 1989, as well as in work reported by Chazee¹¹⁰, Ireson¹¹¹, Fujisaka¹¹², and probably others. Research continued to grow through the 1990's, including work by Roder and the LIRRTP¹¹³, later phases of the Lao-Swedish Forestry Program (LSFP)¹¹⁴, and others.

Based on such research, and growing contacts between Lao research and development workers and colleagues around the region and the globe, interest began growing in how agroforestry concepts and innovations might be useful in upland areas of the Lao PDR. Accordingly, trials of agroforestry elements were incorporated into LSFP, the LIRRTP upland rice program, FSP-CIAT activities, and IBSRAM-MSEC research sites, as well as in various forestry research trial activities, and a range of projects supported by international NGOs and bilateral and multilateral development agencies. Most of these activities thought of agroforestry primarily in terms of interplanted crops and trees, usually in some form of 'alley-cropping', and often oriented along contours as a form of 'conservation farming'.

It was within this context that ICRAF began formal collaboration with NAFRI, in association with the SDC-supported LIRRTP upland program, and later under its Sida-supported Agroforestry Support Project for Vietnam and Laos. These efforts have focused on collaboration with NAFRI, IRRI, CIAT and others to support the Integrated Upland Agricultural Research Project (IUARP) in

Luang Prabang. ICRAF has also developed relationships with the National University of Laos (NUoL) through the Southeast Asia Network for Agroforestry Education (SEANAFE).

Meanwhile, concepts of agroforestry have continued to evolve¹¹⁵, with recognition of traditional and improved forms of ‘sequential agroforestry’ and ‘complex agroforests’, and then on to larger spatial scales with ‘landscape agroforestry’ and its impacts on both livelihoods and environmental services. In order to conduct scientific investigation of these systems, tools have begun to emerge for systematic exploration of local knowledge, for more complex simulations of ecological processes, and for spatial analyses of landscape interactions using GIS and related tools. A shift of focus from multi-purpose tree species to domestication of agroforestry trees is bringing more new challenges. Additional tools have also begun to be employed to improve understanding of policy, economic, institutional and social conditions that support, restrict, or influence the directions of development of such systems. In short, the conceptual ‘arena’ of agroforestry has been expanding rather rapidly. Training materials on elements of this expanded approach are now beginning to be available, such as the ICRAF-Southeast Asia lecture note series, which is now being adapted to languages in some countries of the region.¹¹⁶

While notions of ‘improved fallows’ in shifting cultivation systems (sequential agroforestry) have now become a topic of considerable interest and activity, concepts of agroforests and landscape agroforestry are just beginning to be examined in the Lao PDR (although numerous examples already exist), and while a few of the new research tools are beginning to be explored, others have yet to enter the scene. As many of these have obvious relevance for the issues and problems that research and development seek to address in the uplands of the Lao PDR, ICRAF will continue to seek means for expanding its collaboration in these areas in line with the interest of our Lao colleagues.

Thus, in order to help facilitate further development of livelihood-oriented agroforestry, the following categories are proposed in this section, and further discussions of landscape agroforestry and village-managed natural forest are included under following sections.

1) Improved Fallows and live fences

This type of agroforestry focuses on use of perennials (a) to intensify fallow fields in order to improve upland rice (or other field crop) production that is still necessary in some upland areas, and/or (b) to provide fodder for livestock. Both LIRRTP and FSP-CIAT have experimented with various plants that have value as livestock fodder. LIRRTP has also worked with paper mulberry as an improved fallow, and FSP-CIAT has conducted work with live fences. Actually, it can be argued that once a farmer begins to make these kinds of labor investments in ‘fallow’ fields that yield valuable products, they really are no longer ‘fallow’ fields – it would probably be more appropriate (and accurate) to call them crop rotations, which might also help reduce the negative stigma associated with fallow fields due to their presumed linkage with shifting cultivation.

2) Conservation Farming (perennial contour plantings)

Conservation farming agroforestry focuses on plantings of perennials or natural vegetative strips along contours in fields on steeply sloping lands where other crops are grown. One of their major functions is to help control soil erosion, but contour hedgerows can also be grown as sources of livestock feed, or natural vegetative strips can be a low-labor approach to facilitating formation of small terraces and trees or perennials yielding various types of crops, fodder or other products can later be planted into the contour strips. Hedgerows for animal feed are part of the toolkit of the FSP-CIAT program, while natural vegetative strips have been developed at ICRAF-associated sites in the Philippines and have attracted some initial interest in northern Sayaboury province. Colleagues from ICRAF Philippines have begun working with IFAD project staff to adapt some training materials on these approaches.

3) Tree Gardens

Tree gardens are areas where perennial plants are grown on a long-term basis. These gardens may be relatively simple or complex in terms of species diversity, stand structure, and/or age class, and may yield one, a few, or many types of products. It is worth noting that previous research work in Laos on horticulture and industrial crops is very limited (with the exception of coffee), and development of

adaptive technology is essential and urgently needed. The Horticultural Research center under NAFRI hopes to contribute to this, but it is a new center just beginning its research programs, and will need time to produce practical new information. Research on forest species falls under the domain of the Forest Research Center. As a start for area development projects, small-scale local farmer-operated tree nurseries and propagation facilities linked with demonstration plantings can be a very useful generic type of project intervention that can stimulate creativity and innovation in exploring development of any of the following types of tree garden options:

a) *Fruit trees.* Some types of homegardens can be good examples of small, but diverse plantings of fruit trees that help improve household nutrition and often still generate a surplus for trade or sale. Efforts to improve these types of gardens can build on local knowledge, and have a relatively rapid (for tree crops) impact on expanding household food supply. As mentioned in the earlier discussion of livelihood systems, homegardens also serve as a repository of germplasm, knowledge and experience that can be a foundation for expanded commercial production of particular species when market opportunities emerge.

For more extensive and less diverse commercial plantings, experience is being built in some of the highland opium crop substitution projects. These commercially-oriented ventures need additional technical input, care, quality control, and a substantial time horizon for them to develop into mature, profitable operations. NAFRI includes research on tropical and temperate fruit trees in its research strategy and capacity building activities.

b) *Plantation crop trees.* Obvious examples in the Lao PDR would be para rubber that is developing near the Chinese border in the north, or coffee and tea in some areas of the south. While a gradual increase in work on industrial plantation crops is part of NAFRI's overall research strategy, recent strategic vision documents give the impression that development of large areas of plantation crops does not appear to be a priority for government programs in upland and highland areas.

c) *Domesticated NTFPs.* Examples so far might include paper mulberry, rattan, or cardamom, but there is obvious scope for very substantial expansion of this menu. Since it may be useful to think of NTFP production as having options for production under domesticated, semi-domesticated or managed natural forest conditions, some issues are considered in a separate section, below.

d) *Timber trees.* NAFRI's research strategy includes emphasis on an integrated agricultural-forestry approach to land use.¹¹⁷ As one example of a 'forestry' timber component for upland farming systems, the new draft forestry strategy cites farmers' small-scale teak plantings in northern provinces as having good prospects for producing wood for processing into furniture, flooring and decorative products for the domestic market, as well as for products for international, and especially European markets.¹¹⁸ Research on management issues is being conducted in association with the IUARP project. This may be another area for expansion, if market chains and processing emerge.

4) Organic Produce Gardens

These are specialized mixtures of annual and/or tree crops that are grown for sale to markets for organic chemical-free produce. Informal MAF discussion documents mention as promising examples vegetables, dried bananas, peanuts, sesame and animal feed products in border areas. While there are some interesting lines of argument being offered as to why this would be a good approach for agricultural development in upland zones of Laos, there are also several that will need substantial additional work if the product lines, markets and production areas are to expand:

- Where are the 'green' markets for organic produce, and what are their prices, capacities and quality requirements? While many urban consumers express a willingness to pay 'a bit' more for chemical-free produce, they also often expect it to have no blemishes or imperfections, which can be very difficult without use of chemicals.
- Professional organic farming for urban markets usually employs some quite sophisticated organic technology, such as bio-pesticides, techniques and equipment for generating large

quantities of high-quality compost and mulch, etc. While some of these receive brief mention in NAFRI's research strategy (but often in the context of mixed organic and chemical methods for soil fertility or 'integrated' pest management), a potentially quite substantial amount of work will need to be done to explore more purely 'organic' technologies and help make them available in Laos.

- Production of 'chemical-free' produce will require organization at scales beyond the household in order to assure that there is no contamination from use of chemicals in nearby fields.
- Before consumers (or retailers) are willing to pay higher prices for organically grown produce, they need to have good reason to believe that they will get what they are paying for. How can mechanisms for quality assurance or certification be developed and effectively implemented?

11. Issues for area-based development projects:

Some recent government documents indicate there are still some areas where forest fallow rotational systems are still viable, but policy implementation still aims to end all shifting cultivation and limit land use recognition to not more than 2-3 years of fallow -- these are contradictory positions that make it unclear about how to proceed in agricultural development

In areas where fallow cycles are short, improvement of fallows by integrating livestock fodder, various legumes or tree crops, and possibly semi-domesticated NTFPs, show some promise. But as long as they are called 'fallow', they appear to be potential targets for efforts to end all shifting cultivation.

There appears to have been relatively little attention to work with homegardens to strengthen their functions as a household supermarket, gene pool and incubator. Projects could work on such issues beginning with propagation skills, village nurseries and demonstration plantings, but how would such work be reflected in project indicators and measures of poverty alleviation?

Although some recent government documents appear to downplay the importance of field crops and plantation crops in the uplands, and do not mention smallholder timber-producing woodlots as a priority, these are still mentioned as potentially important options for upland land use in other strategy documents.

While there are some interesting arguments to support promotion of production of organic produce, there are still some fairly sophisticated technologies associated with professional commercial production of these products. Should area-based projects try to help search for that technology and support its adaptation, testing and refinement?

11. Points for policy dialogue:

Will the government continue to deny recognition of forest fallows in those areas where rotational cycle lengths are still viable?

Will improved fallows still be considered 'abandoned', thereby limiting the number of years that it can serve as a fallow? If so, what are the criteria for distinguishing between when a field is in 'fallow' versus being actively managed and producing?

How would work to strengthen the base and capacity of homegardens be viewed by the government as a strategy for building food security and foundations for commercial production?

What will be the role for field crops and plantation crops in the uplands? What will be the policy toward the types of timber-producing woodlots that appear to be encouraged in the draft forestry strategy?

How seriously does the government want to promote production of organic produce or other 'chemical free' products? How strong are the mandates for national institutions to work on support for this type of production?

5) Other crops

NAFRI's research strategy also includes substantial focus on improvement of field crops (especially maize, legumes, cassava, and tubers), as well as other industrial crops (cotton, sugarcane, tobacco).¹¹⁹ Recent informal MAF discussion documents discount the ability of Laos to compete in producing large quantities of agricultural field crops, and opt for efforts to move beyond subsistence farming to more diversified, commercial agricultural production that targets 'niche markets'. Even under this strategy, however, there may be a role in upland areas for some level of maize production – especially as it relates to animal feed – as well as for legumes in improved fallows or conservation farming practices. Some officials also claim that potato and other tuber production is promising.

3.2.4 Non-timber Forest Products

The participatory village land use zoning processes that the government is attempting to conduct under various policies and programs are aimed at delineation of different types of land use zones within village boundaries. In its essence, this is an exercise in 'landscape agroforestry', in that it seeks spatial arrangements of agricultural, agroforestry and forestry landscape components in a manner that can both improve local livelihoods and maintain provision of environmental services from those landscapes for the benefit of larger society. Experience so far indicates that a substantial portion of village land in upland areas is being zoned for protection or regeneration forest, which is aimed primarily at stopping shifting cultivation in order to maintain provision of watershed services providing benefits for downstream society. A major challenge for these areas is how they can provide sufficient useful benefits for local livelihoods, so that they can also help reduce rural poverty and provide incentives for the local people who will be responsible for their maintenance.

NTFPs. The government is looking to non-timber forest products (NTFPs) as a central means for addressing this issue. The Forestry Research Center located in NAFRI has responsibility for NTFP research, and is seeking to institute plans to further build its capacity in this area under the new draft forestry strategy. There has already been interesting work with some NTFPs under projects supported by the World Conservation Union (IUCN), an information center supported by Care, and a range of others, but there has been fairly little research, and much remains to be done to systematize support for NTFP production. Research began with work on bamboo and rattan with support by IDRC/INBAR in 1992, and FRC has been seeking to work with the forestry department at NUoL and others to develop an R&D network. NTFPs became a national priority in the mid-1990s, and the government appears to be offering strong support for such efforts, as consistently expressed in the draft NPEP, all current strategy statements (agriculture, watersheds, forestry), the Master Plan Study, and other documents.

One major question in this line of activity is where to begin, since the term 'non-timber forest products' includes a potentially enormous range of possible products. Examples of lines of further analysis that may help here might include: (1) where are the markets and what are their priorities among products suitable for the production zones in question? (2) what are the NTFPs that villagers believe are most productive and/or profitable? (3) are there reasonable ways to begin grouping or 'bundling' NTFPs so that multiple products can be researched simultaneously? (4) are there certain bottlenecks in NTFP production that could be addressed by 'generic' adaptive research facilities or programs (such as propagation, for example)? (5) might particular forest types or niches be managed in a way to provide a 'suite' of NTFPs that do well under those particular ecological conditions?

12. Issue for area-based development projects:

NTFP production is a high priority for upland development, but support services are not yet in place. If project areas initiate work on NTFPs, how can such work best relate to national efforts?

12. Points for policy dialogue:

How soon will NTFP development activities under the new Forestry Strategy to Year 2020 be implemented? Are there area-based project sites that could be pilot areas for early implementation under project funding?

3.2.5 Community-based Natural Resource Management

The NAFRI research strategy also includes a strong emphasis on land use planning – especially for upland areas – based on farming systems and agro-ecological zones. Provinces are expected to take the lead for planning, based on recommendations pertaining to land use management from policy direction and research findings. Section 1.4.2, above, presented examples of how NAFRI is presenting policy perceptions in visual forms for consideration in more detailed zoning and LUP/LA work at village and district levels, and simple versions of similar tools are being explored in association with NAFRI for local use and to help provide channels for return flow of information and perceptions from the local to the policy level. Moreover, NAFRI’s land management program is now also actively involved in case studies of impacts of LUP/LA implementation outside of pilot areas.¹²⁰

Monitoring Livelihood and Environmental Service Impacts. Another area for exploration is how to assess whether land use zoning arrangements and agroforestry landscape management are achieving their stated goals. In terms of impacts on local livelihoods, NAFRI’s socio-economics unit is developing and testing methods for diagnostic surveys that can help assess local conditions, livelihoods, and impacts of policies aimed at upland livelihood transformation.¹²¹

In terms of impacts on environmental services, methods are being developed in some other Southeast Asian countries for community-based monitoring of stream flow and water quality coming out of watersheds with agroforestry landscapes, as a means for clarifying performance of that landscape. They are also using various analytical and modeling tools to further ‘fine tune’ zoning and the nature of land use restrictions or opportunities within each zone, in order to improve benefits accruing to both local communities and larger society. At least at some point, these types of tools and methodologies may be of interest to efforts to improve integrated watershed management in the Lao PDR.

13. Issue for area-based development projects:

Is there a role for local monitoring of landscape performance in providing environmental services in area-based development projects?

13. Point for policy dialogue:

If integrated watershed development will become a major framework for development in the uplands, what will be the role of local communities in monitoring watershed services from agroforestry landscapes, and how can area development projects help develop appropriate capacity?

Improving Equity in Provision of Environmental Services. Many constraints are being placed on how land can be used by upland communities, and many of these constraints are motivated by a need to protect and maintain environmental services enjoyed by downstream societies who appear to be more quickly benefiting from development processes. The government recognizes the need for more equity in the rate at which development is proceeding in the lowlands and uplands, and is trying to help compensate with NPEP and associated investments in infrastructure and services. But might there not also be longer-term mechanisms that could help address this equity issue by helping reward efforts by upland households and communities to maintain environmental services?

ICRAF is coordinating a Southeast Asia regional project entitled Rewarding the Upland Poor for Environmental Services they Provide (RUPES), which is implemented through a multi-institutional consortium partially supported by IFAD. This project is seeking to explore and test approaches through which upland poor communities, who are being asked to pay much of the cost of environmental service (water, biodiversity, carbon stocks) provision that benefits larger societies (downstream, national, global), can receive a more equitable share in the benefits provided. Exploratory studies and efforts to identify potential sites for trials of RUPES-type mechanisms are underway in Vietnam, and recent initial contacts were held between ICRAF and IUCN staff about possibilities for such activities in the Lao PDR.

Indeed, the Lao PDR already appears to have begun considering such issues, as reflected in the decision to allocate one percent of the revenues of the Nam Ngum hydroelectric generation installation to development in watershed areas of the reservoir¹²², and similar arrangements appear to be under consideration for other sites. There is also some discussion about whether the commercial market interest rates for agricultural finance that are being promoted through government banking operations in major agricultural production zones of the country might be reduced in upland areas where risk and uncertainty – as well as poverty – are greater, at least as a method for helping reduce barriers against innovation and start-up costs. These are examples that are already underway or under serious discussion that could provide some potentially very interesting pilot studies for the RUPES approach, if the Lao PDR is interested in participating in this type of project.

14. Issue for area-based development projects:

The Lao PDR government is already developing a 'RUPES-type' mechanism to allocate part of the revenue from the Nam Ngum hydroelectric plant to development in its upper watersheds, and is considering subsidizing interest rates for upland activities that help protect environmental services. Could these or similar activities become part of regional pilot projects to develop and test the use of such mechanisms for longer-term rewards for upland poor communities who help sustain provision of environmental services?

14. Point for policy dialogue:

What is the potential for testing of RUPES mechanisms in the Lao PDR?

3.2.6 Agro-processing and micro-enterprise

Development of micro-enterprise, with emphasis on those based on processing of raw materials derived from local land use systems, is a potentially important line of activity with substantial capacity to improve local incomes and alleviate poverty in upland areas. Perhaps its most simple form is in household-based assembly, trading, and/or transport of local agricultural and forest products (as is already beginning to occur in some areas), or in use of specialized skills to provide local services, such as nurseries and propagation facilities producing improved or exotic planting materials for expanding areas of local agricultural production. For enterprise requiring somewhat more sophistication and investment, processing of agricultural or forestry products can allow local people to expand to additional markets, capture more value added, and transform raw materials into forms that are more easily stored and transported, which helps to further expand flexibility and capacity to meet a wider range of market demands. Processing capacity can expand beyond household levels through various types of organization, and provide employment for local communities and markets for local agricultural and forest products. The government has recognized the obvious potential contribution of such lines of activity to rural development and poverty alleviation in the uplands, and they are included in principle in most policy documents and vision statements.

But if development programs and projects are to become more serious about facilitating and supporting development of agro-processing and micro-enterprise, there are various dimensions of such activities that need to be given substantial thought and consideration. Since this report is mandated to focus on upland agricultural development, this section will only present a few examples relevant for development of processed products based on inputs derived from local land use systems. Moreover, particular consideration is given to production of 'niche products' derived from various components of the ecologically and ethnically diverse landscapes in upland areas, as proposed in recent informal MAF discussion documents.

- **Market opportunities.** As with production of commercial crop commodities, survey and analysis of potential marketing opportunities should be conducted very early in the process of considering micro-enterprise development. Development of comparative advantages for existing markets (which may be newly accessible after road improvement) may be necessary in early stages, although subsequent efforts could also seek to develop new potential markets. And, while domestic provincial and national markets would be important, their currently rather

limited capacity and value for many potential products may make at least regional markets worth consideration. Indeed, it may be worth considering coupling of exploration of markets for agricultural and forestry commodities with exploration of markets for processed products.

- **Product identity and product lines.** One element of being able to capture value added and compete in higher value commercial markets relates to the kind of product identity that can be developed. One can choose to try to produce for an existing well recognized and valued production operation, or one can seek to develop one's own reputation and identity. Indeed, these are sometimes phased approaches. And, if efforts are directed toward a diverse range of 'niche products', it may be an advantage to consider grouping potential products into product lines that can be marketed under a single overall identity. An interesting example of this approach is provided by the Royal Project Foundation in neighboring Thailand, who markets a wide range of products from upland areas under the brand name 'Doi Kham'. In considering approaches for developing product identities in the Lao PDR, it may be worth surveying local and nearby areas for sources of widespread notoriety; some areas already have good reputations for particular products that may serve as a base. Ancient places of regional historical significance are another possibility, especially in Luang Prabang where development following from its World Heritage status could set the stage for an integrated approach to tourism and lines of products, such as herbals and medicinals for example, with complementary images and marketing potential. Less widely known nearby areas might become satellite areas.
- **Generic production and marketing chain technologies.** If areas might aspire to production of a fairly diverse line of such 'niche' products, it may be important to consider how relatively 'generic' production and marketing chain infrastructure and technologies may be developed. The term 'generic' refers here to their capacity to produce, process and market a range of products, as opposed to systems that are developed around production of a single commodity or product. Facilities and systems developed by the Royal Project Foundation in neighboring Thailand again provide a quite clear example of this approach tied to highland production, and there are various other private sector examples in the region.
- **Quality control.** Establishment and implementation of high quality control standards and processes is an essential component for being able to access and maintain a significant market share, especially in more premium markets, and even in more general regional markets where competition is substantial and consumers have rising incomes and expectations. Indeed, a market identity can backfire if it becomes associated with poor quality products. Government policies and plans already recognize these issues for production more generally, and are currently proposing efforts to donors for launching various associated lines of activity.
- **Finance.** Investment costs required to establish and develop agro-processing micro-enterprise is another potential bottleneck that is already well recognized. IFAD is already engaged in helping develop financial mechanisms and institutions in project areas that would appear to be able to become active in supporting micro-enterprise development. Project reviews at this point, however, indicate it is still too early to assess the viability of these efforts. Some of the issues associated with efforts to develop rural and micro-finance in the Lao PDR were reviewed last year in a major workshop supported by the World Bank and Concern Worldwide.¹²³
- **Research and development.** Although research and development of associated technologies and management systems is still in an early stage in the Lao PDR, there is considerable and rapidly growing experience, technologies and equipment available in neighboring areas of China, Thailand and Vietnam that can serve as a source of ideas for adaptation to conditions in Laos. Moreover, CIAT is launching a new regional 'Small Scale Agro-enterprise Development in the Uplands (SADU) Project' aimed at working on many of these issues, particularly in Vietnam and the Lao PDR, and it is their intent to draw on regional experience as much as possible. Plans are developing for their collaboration with activities under the IFAD-supported project in Oudomxay province.

4 Agricultural Development Implementation Support Services and Processes

Most all previous government and NGO experience indicates that highly participatory approaches will be necessary to seek the kind of highly localized agricultural development solutions appropriate for the environmentally and ethnically complex conditions in upland areas. And with the decentralized governance approach mandated in most all policies and programs, support mechanisms are urgently needed at village, district and provincial levels if their mandates are to be accomplished with the kind of quality envisioned in policy documents. Thus, a major essential core component of government efforts to implement high-level strategic visions and policies is a “demand-driven” research and extension support system that supports local people’s active involvement in their own development.

4.1 Emerging National Systems for Agricultural Extension & Support Services

Although a National Agriculture and Forestry Extension Service (Agency) – now known as NAFES – was conceived as the extension service counterpart to NAFRI in the 1999 strategic vision for the agricultural sector, it was not until 2001 that NAFES was established. Staff at DAFES and PAFES units organized within DAFOs and PAFOs are now to be upgraded to provide support for village development. Activation of research-extension linkages will enable NAFRI and NAFES to work together with farmers in the adaptive research and extension process to develop a menu of production choices consistent with local opportunities and market signals.

Two major projects have been designed to help develop the capacity and programs of the new demand-driven extension system:

- The **Laos Extension for Agriculture Project (LEAP)**, funded by the Swiss Agency for Development and Cooperation (SDC), began in 2002 and is based at the Central Extension and Training Development Unit (CETDU) of NAFES, where it is seeking to become a test-bed for the development of extension methods and delivery systems, as well as for the development and testing of the training and coaching activities. Pilot field sites for training district and provincial staff are located in Luang Prabang, Champasak and Saravan provinces.
- The complementary **Lao-Swedish Upland Development and Poverty Alleviation Programme (UDPAP)** has been designed as a pilot implementation project for two poor districts in each of two provinces of the north (Luang Prabang and Oudomxay). This project would work through the full set of implementation processes from village to national level, in order to develop and refine the processes for further application around the country.

Unfortunately, Sida approval for the UDPAP has been delayed, although there is still some hope that it might be able to begin implementation during 2004. Meanwhile, however, the LEAP project is moving ahead quite actively to assist CETDU in launching work on extension methods and training programs.

The structure of the proposed UDPAP¹²⁴ project is useful in helping to understand in more detail the nature of overall efforts to build the demand-driven extension system. Key components of the NAFES network include:

- **Village development planning and implementation** is to be based on an annual village development cycle, which uses a participatory approach to identify, implement, monitor and report on development and extension activities with farmers. Expanded menus of agricultural technologies are to be introduced to farm families along with improved decision-making mechanisms to increase the performance of their livelihood systems. This will include increased understanding of market signals, commercial income generating activities, and improved village finance mechanisms. Requests for district assistance will be included in the village plans.

- **District response** will support the village activity plans. The DAFES will coordinate with other district agencies as required, and seek support and assistance from provincial and central levels as needed.
- **Provincial support.** The PAFES is to be the core of provincial support for the demand-driven system, and will provide technical support for DAFES extension agents using subject matter specialists appointed from various PAFO sections. PAFES will supervise annual DAFES work plans, and act as a conduit between DAFES and the national extension service in such areas as organization, extension methodology, technical information flow, extension-research linkages, policy, etc.
- **Central Support and Backstopping** is to be done primarily by NAFES, who will develop extension methods, processes, procedures and mechanisms for all levels, with full participation of all key sectors. NAFES will cooperate with NAFRI to construct mechanisms to screen indigenous and exogenous technologies for wider dissemination to other areas with similar conditions, and will produce extension and training materials for farmers, PAFES and DAFES extension staff.
- **Extension policy support** will identify present and potential extension policy issues, which will aid the NAFES network to provide upland farmers with better extension services.
- **Market support for extension** activities are to include establishment of a market information service, inclusion of a marketing element as a part of all extension programs, and assistance in establishment and operation of periodic markets. Training on various aspects of marketing will be provided to villagers and extension staff at all levels.

With this type of vision in mind, the LEAP project has sought to help bring consensus and direction to the overall system through: (1) a survey and assessment of existing extension methodologies used in the Lao PDR by NGOs and projects¹²⁵; (2) a National Workshop on Agricultural Extension, held during July 2003 (proceedings to become available during late September 2003); and (3) a National NAFES Workshop on Extension System Development, to be held 1-2 October 2003. The October workshop should help clarify the current situation and future directions of the extension system for donors, and help projects understand where they can go to obtain what kind of assistance that is currently available.¹²⁶

Extension process development conducted thus far under the LEAP project include: (1) development and testing of a training needs assessment tool for district extension agents to use with villagers in their area¹²⁷; (2) three rounds of training for 'master trainers' and for provincial and

15. Issues for area-based development projects:

Efforts under area-based projects need to coordinate with NAFES, its LEAP project, and hopefully the new Sida project, so that area-based project extension development activities can be consistent with, and help contribute to, the development of the extension support system that will remain in place after the end of its project.

How can area-based projects both access and contribute information on extension methods, training materials, etc. being developed under these efforts?

Entrepreneurship needs to be fostered and facilitated, so that it can be developed in a manner conducive to longer-term mutual benefits among producers, processors and traders, rather than with a focus on short-term exploitation for quick profits. Thus, there also needs to be efforts to avoid monopolies, which are prone to abuse, with the idea of stimulating market environments and not 'company towns'

15. Points for policy dialogue:

Points for dialogue may emerge from a review of results from the national workshops currently being organized in association with the LEAP project.

district staff in pilot areas¹²⁸; and (3) application of a coaching tool called SIFT (somewhat similar to a SWOT analysis) that helps identify successes, gaps, failures, and where to go next.¹²⁹ In addition, LEAP is conducting studies of some possible models for long-term financing of agricultural extension.¹³⁰

4.2 An Approach to Linking Adaptive Research with Extension Support Services

Given the delay in establishing NAFES and launching pilot projects to develop staff and the overall extension network, NAFRI and its Northern Agriculture and Forestry Research Center (NAFRC) in Luang Prabang decided to forge ahead with a pilot project aimed at exploring practical approaches for trying to ‘make the (demand-driven) system work’ as outlined in the MAF strategic vision for the agricultural sector. While there are and have been numerous pilot efforts by NGO and government projects to develop participatory local agricultural research trials and extension approaches in upland areas, this effort has been somewhat different in that government agencies have taken the leadership initiative, the entire effort is embedded in and seeks to strengthen government research and extension support services, and major efforts have been made to incorporate collaborative partnerships with outside organizations, with particular attention to international research centers, including those from the CGIAR. The experience is proving to be mutually beneficial for all involved, and may include some useful lessons for area development projects.

Integrated Upland Agricultural Research Project (IUARP)

The IUARP is a multidisciplinary integrated research project being implemented by NAFRI, designed to support Lao government agricultural policy (to improve food security, alleviate poverty and stabilize the environment) by conducting integrated adaptive research in the Lao uplands. The IUARP has four objectives, to be achieved using integrated and participatory research approaches:

1. Develop, test and refine methodology for integrated upland agricultural research;
2. Develop sustainable livelihood systems as alternatives to slash and burn;
3. Enhance current staff capacity in integrated upland agricultural research within NAFRI, relevant PAFO and DAFO; and
4. Enhance community development, decision-making & leadership capacity in target communities.

Conceptualized in 1999, implementation of IUARP began in Luang Prabang’s Pak Ou District during late 2000, and field research began in four villages during the 2001 wet season. In 2001 the project worked with about 50 farmers in these villages, and by 2002, the number of villages increased to seven, with about 230 farmers working with the project. Project implementation details and results can be found in IUARP annual reports.¹³¹ Some of the key elements of IUARP include:

Collaborative Partnerships

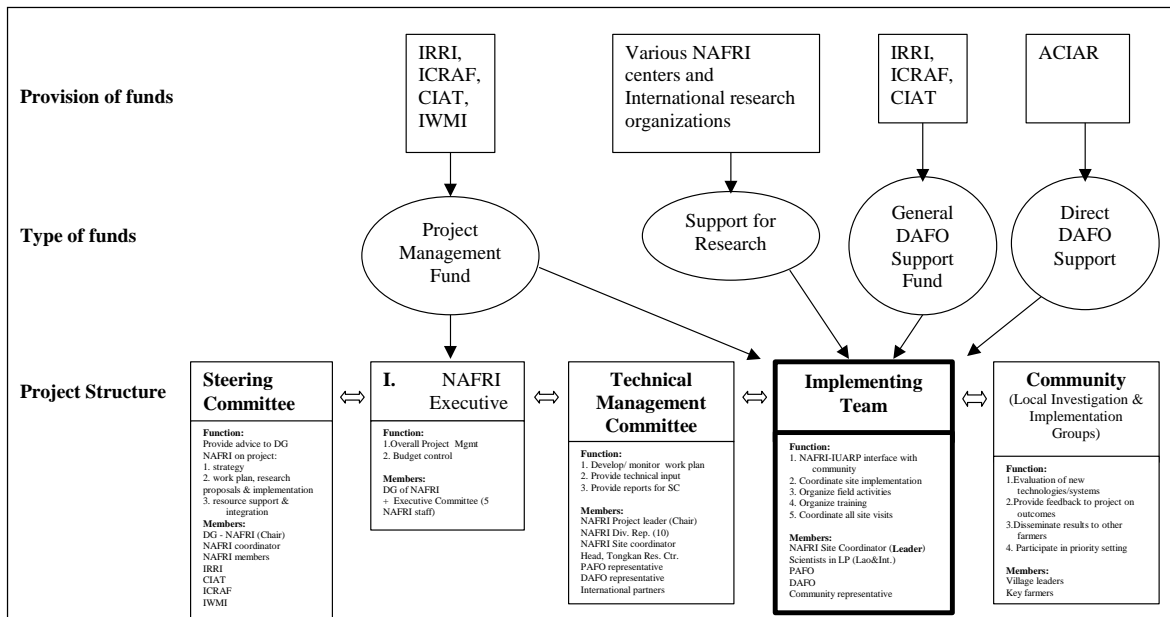
Given the high level interest in and mandate for IUARP, overall project management is with an Executive Committee chaired by the DG of NAFRI. A project steering committee, composed of selected staff from NAFRI and some international organizations, advises the DG on project strategies and direction. A Technical Management Committee helps develop work plans and provides technical input; it is chaired by the NAFRI Project leader and includes directors of NAFRI centers, members of the Implementing Team (IT) and international partners. Directors of NAFRI research centers are responsible for coordinating activities in their sections, and international organizations work with the IUARP through and in collaboration with one of the NAFRI research centers.

Given the number of organizations working with IUARP, and the limited amount of human resources available at local levels, coordination of activities is crucial. Thus, an Implementing Team (IT) was established to help coordinate and integrate field activities at the village level. The IT is led by the Site Coordinator, and includes local researchers and extension workers (from NAFRC, AFRS, TRS, PAFO and DAFO). All activities are directed through the IT, since it serves as the main interface

between researchers and the community. The IT meets once a month to discuss progress and future plans, and an IUARP Update is sent out regularly to keep all partners informed about field activities.

Strong local leadership and involvement (local NAFRC researchers and PAFO and DAFO staff) has been key for the success of the IUARP. This has allowed for decisions to be made rapidly and activities to be implemented in a timely manner. Involvement of the DAFO supports MAF policy to develop generalists at the district level for extension. In the field, research is a joint effort between farmers, DAFO staff and researchers. Strong DAFO involvement is also critical for project success as district staff are in a much better position to provide regular follow up and monitoring. The DAFO has provided six staff to work in the IUARP since 2001. The District Chief has also been involved in a few key activities, which has facilitated rapid acceptance of the IUARP in villages. The MAF Minister, Dr. Siene Saphangthong also visited the IUARP during 2003, and after visiting and talking with a number of farmers, he indicated that he was very pleased with the progress of the project.

Figure 20. IUARP Management & Funding Organization



Methodological Approach

Since development of an adaptive research methodology that NAFRI can use to address agricultural problems in the uplands is an important objective of the project, a substantial amount of initial effort has been put into thinking through the basic approach. It is recognized that while a lot of research has been conducted in the uplands, very little of it has actually had much impact and been widely adopted. Reasons for this are seen to include the high ethnic diversity of the uplands, variable market access, and little access to lowland rice paddies or knowledge of livestock, which have been the main focus of many research activities. Thus, technologies often have limited recommendation domains in the uplands. Given this challenge, a different approach to research is seen to be essential for the uplands, wherein research needs to be more applied, adaptive and participatory, with the idea still being to introduce new technologies, but working with farmers to build on their local knowledge in adapting improved and new technology to their environment.

Participatory Methods

In order to implement this approach, it was essential to develop staff capacity in using participatory methods. Thus, during the first two years, a large amount of effort has been directed toward developing staff capacity in participatory methods for adaptive research and development. Important lessons that have been learned from this process include:

- Training in participatory research approaches requires a lot of time and effort in early of years.
- Constant follow up and training is necessary to ensure that methods are being used appropriately.

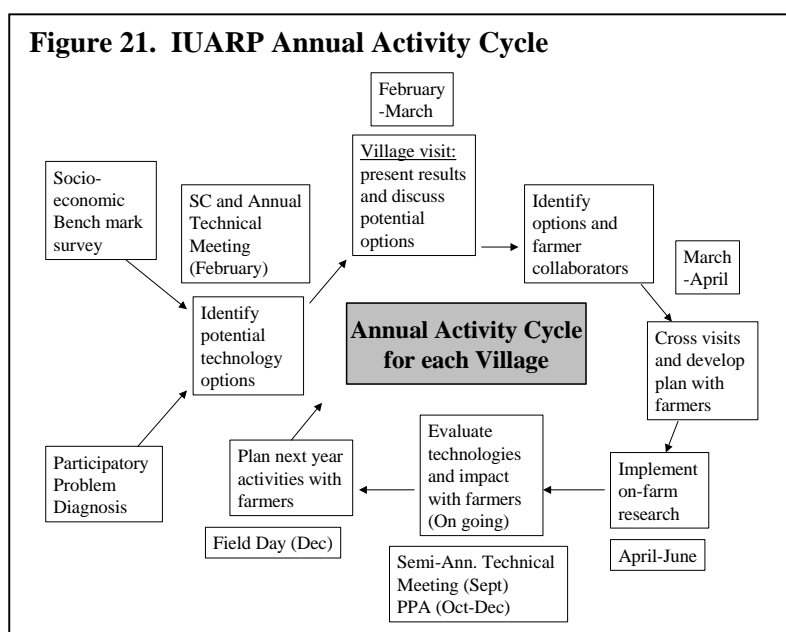
- The most effective trainings are those that are provided on a needs basis and are linked directly to fieldwork, providing immediate hands-on experience related to the trainee's field of interest. This allows trainees to easily remember what is taught and gives the training an immediate application.

Effort put into such training is now seen as a good investment, however, especially in terms of both the increased trust of farmers, and the number of farmers wanting to collaborate. In 2002 IUARP is working with 230 farmers in 7 villages.

Annual Activity Cycle

During the first two years the IUARP adopted and modified a research cycle to assist in the coordination and implementation of field activities, as outlined in Figure 21. Use of this approach has allowed researchers and farmers opportunities to develop research activities together, learn from farmers' experience, and educate farmers in new methods that may have potential for addressing their problems and opening new opportunities. The cyclical nature of this approach requires that lessons learned in one year be applied to the next. Some of the key steps in the cycle include:

- Initiation of the process began with a participatory problem diagnosis wherein farmers identified their own problems during meetings held in each village.
- Then, with added information from a benchmark socio-economic survey, potentially useful technology options were identified at a technical meeting, and then presented to and discussed with farmers during village visits. This resulted in identification of options in which villagers are interested, along with specific farmer collaborators wanting to work with those options.



- Once technology options and farmer collaborators are identified, project staff organize cross-visits whenever possible, work with them to develop plans, and help them establish and implement on-farm adaptive research trials during the appropriate season.
- At the end of the growing season, the performance of technologies and impact with farmers are evaluated. Various tools are being experimented with to assist with this process. The use of farmer preference ratings has been a useful 'first cut' approach that has gained considerable approval from farmers.
- The annual cycle ends with an annual Field Day where communities gather to learn about and discuss the results of last year's trials, which feeds into the process of identifying options for further activities during the next year. And thus, the cycle begins again.

This approach is proving to be very effective for developing technologies that are suitable for farmers. Moreover, it is also very consistent with approaches now being developed for application in the 'demand-oriented' extension support system network, and NAFES staff and the LEAP project have been holding discussions with IUARP staff and exploring its implementation field sites.

Problem-Solving Adaptive Research

A few examples of problem-solving adaptive research activities initiated in response to problems identified by farmers are listed in Figure 22.

Figure 22. Problems identified by farmers and IUARP research to address these problems.

Problem addressed	Activity	Partners (Implementing partner in bold)
Food shortage	Fallow improvement	KTU, NAFRC , IRRI, FRC, ICRAF, CIAT
	Upland rice variety evaluation	NAFRC , IRRI
	Upland rice seed priming	NAFRC , IRRI
	Rodent management	ARC , NAFRC , ACIAR
	Variety evaluation for gall midge resistance & yield	NAFRC , IRRI
	Improving new paddy productivity	NAFRC , IRRI
	Assist in dry season expansion	NAFRC , IRRI
Livestock and fisheries	Sloping land management	SSLCC , NAFRC , IWMI
	Forage evaluation	PAFO , CIAT-FLSP, LRC
	Cage fish evaluation	LARReC , NAFRC
	Pond fish evaluation	LARReC , NAFRC
Low income	Earth pond frog raising	LARReC , NAFRC
	Fruit trees evaluation	NAFRC , HVRC , ICRAF
	Integrated fruit tree systems	AFRS , FRC, ICRAF
	Teak plantation management	TRS , FRC, ICRAF
Deforested forest areas	Fruit tree nurseries	AFRS , HVRC , NAFRC , FRC, ICRAF
	Rattan evaluation	AFRS , FRC, ICRAF

Source: IUARP Annual Technical and Financial Report, 2002.

Some of the lessons learned already from this process include:

- Technologies that are most preferred by farmers are those with short-term economic benefits. Such technologies provide good entry points to working with farmers and develops farmer trust.
- Before farmers can integrate many new technologies into an integrated farming system, they need to become familiar with the new technologies. This requires some time as they test the technology. However, once they become familiar with a technology, farmers begin to integrate these components into their farming systems. How farmers integrate varies with farmers and the resources they have. Researchers need to provide technical options and expertise initially, and then monitor and document how farmers are adapting and integrating these components.
- Participatory research methodologies have increased farmer trust in researchers and extensionists, which has made it much easier to work with farmers in the community. Involving farmers in the research process has further developed trust and the spread of technologies within the community.

Further Directions

- During 2003, IUARP began a new line of collaboration with ICRAF and SLU in association with their “Sustainable Land Use Practices for the Uplands of Vietnam and Laos: Science and Local Knowledge for Food Security (LUSLOF)” project, that is introducing an approach for more systematic understanding and analysis of local ecological knowledge (LEK), including MSc study in Sweden for an IUARP PAFO researcher, who will conduct his thesis research in IUARP villages.
- ICRAF is also working with IUARP to develop a fairly simple spatial information system (GIS) for the project, which will also be able to utilize information from and provide local information to the national spatial land use information system located at NAFRI.
- A draft framework for Participatory Monitoring and Evaluation (PM&E) was developed during 2002, and follow-up activities are being formulated to further refine it and begin implementation.

16. Issues for area-based development projects:

A key element of IUARP progress is the high quality of PAFO staff, who are able to work with and coach district staff, interact effectively with central agencies, and utilize their own growing network of relationships (both within the country and internationally) to stimulate creativity and motivation in project activities.

While the IUARP has been a single site pilot project, lessons from its experience are clearly relevant for many other areas. It is useful as a site for field visits by villagers and staff from other project areas, but several have questioned how such activities could be started at other sites. Since many features of IUARP operations are consistent with the approaches being developed under NAFES (farmer preference evaluations, annual cycles, etc), and much of its focus is on research-extension-farmer linkages, it may provide a useful 'model' that can be adapted to other areas as PAFES and DAFES operations are planned and launched.

16. Points for Policy Dialogue:

How can area-based development projects best help develop a critical mass of skilled core staff at provincial and district levels who can help guide agriculture and forestry development processes, help access outside information and foster, and help coach younger staff -- both during the project and over the longer term?

How does the government plan on using the promising results of the IUARP project in other districts and provinces?

4.3 Facilitating Effective Agricultural Development

This final section seeks to table three remaining issue areas that have frequently been mentioned in reviews and reports, as well as in discussions with various people consulted during report preparation.

4.3.1 Building Synergies among Projects

There still appears to be inadequate communication and cooperation among the various government, NGO, and sometimes private sector projects operating in or nearby to area development projects such as those of IFAD and other organizations. Efforts to exchange experience and build synergies among projects are urgently needed, especially where limited capacity in village, district and provincial institutions is being pulled in different directions. While the UNDP has made efforts to help facilitate exchange at the national level, many projects are still unfamiliar with the work of others, and more detailed levels of interaction are needed at more local levels. While various informal seminars and networks make some useful contributions, there are also natural human and organizational forces that reinforce notions of 'territory', 'ownership', 'proprietary ideas', and associated competition and rivalries that work against constructive interaction. Balance and mutual recognition and respect are necessary elements of effective collaboration, and fora and facilitators that can foster this type of interaction could make some important contributions.

17. Issue for area-based development projects:

Communication and cooperation among the various projects operating in or nearby to area development projects still appears to be inadequate. There is an urgent need for projects to exchange experience and build synergies, especially where limited capacity in village, district and provincial institutions is being pulled in different directions.

17. Points for policy dialogue:

How can efforts be strengthened to promote communication, cooperation and exchange of experience among projects within and nearby to area-based project districts and provinces, as well as at the broader national level? Could appropriate units of local or central government take more initiative in such efforts?

4.3.2 Logistics and incentives

While projects and government programs expect a great deal of effort from staff at district and provincial levels, there is often inadequate consideration of the livelihoods of local government staff, which very often includes extremely low salaries, limited training and information, and inadequate logistics. Without some additional incentives for extra time and effort spent in projects, they must often engage in their own farming or household enterprise during evenings and weekends in order to help provide for their families. Livelihood allocation decisions are part of both staff and village reality.

18. Issue for area-based development projects:

Most area-based development projects - like government programs - usually expect very strong initiative and performance from village, district and provincial staff working with the project. Reasonable incentives need to be used to help them allocate more time and energy to project activities without distorting conditions in a way that is likely to create problems after the project is completed.

18. Points for policy dialogue:

How can reasonable incentives be used to help project-associated staff allocate more time and energy to project activities without creating systemic problems in the longer term?

4.3.3 Recognizing Reality

There is a tendency for people designing and proposing projects to build in expectations about rates of agricultural development that are unrealistic in upland areas. Quick-yielding, high-return activities like improved paddy rice seed (where paddies are available) or livestock disease control are the exceptions, rather than the rule. In addition to needs for local capacity building, two very important elements for upland development that increase time horizons required for development are: (1) the need to begin with clarifying land use arrangements - and thus the range of constraints and opportunities available; and (2) the simple fact that if perennial plant species -- trees -- are to be important components of livelihoods and landscapes, it takes time for them to grow and develop. Moreover, development of entrepreneurial and marketing skills and systems can require quite significant amounts of time. When the King of Thailand predicted it would take 30 years to develop 'alternative' production systems in mountain areas associated with opium production in north Thailand¹³², international development organizations became very nervous. History, however, has proven the King's insight to have been correct.

Thus, projects need to avoid naïve or rash promises about how quickly they are going to transform upland agriculture into 'sustainable alternative livelihoods'. Such promises can create negative attitudes among local villagers after activities do not live up to expectations, and at the same time it sets up the project to be a 'failure' when its unrealistic objectives and targets are not met. This is not meant to be discouraging. Rather, it is meant to encourage people to think through the processes they are dealing with, and realize that a 4-6 year project is quite a short period of time in the scheme of things. It is only then that more meaningful plans can begin to work on the fundamental processes involved, and more useful criteria and indicators can be developed to articulate and assess the progress made during the time frame of a development project.

19. Issue for area-based development projects:

Project design and expectations need to be honest and realistic about rates of agricultural development that can be expected to occur in upland areas. Time frames need to be viable, and criteria and indicators of progress need to reflect both qualitative and quantitative dimensions of livelihood improvement. Over-emphasis on promises for quick boosts in cash incomes are likely to lead to poor attention to fundamentals, as well as to disillusionment if promises are not fulfilled.

19. Point for policy dialogue:

How realistic are the time frames for agricultural development in the uplands and the associated targets of specific area-based development projects?

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-- full citations are listed in the references appendix --

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Appendix 2: Issues and Dialogue Point Summary Tables

<i>ISSUE FOR AREA-BASED DEVELOPMENT PROJECTS</i>		<i>POINTS FOR DIALOGUE WITH THE GOVERNMENT</i>
<i>Policies and Visions for Upland Agricultural Development</i>		
1	Since Integrated Watershed Management is being described as a 'bold new approach', its development may provide a framework for coordinating and integrating the multiple policies and visions directed toward upland development.	Does the government plan to develop the Integrated Watershed Management approach as a coordinating mechanism for implementing upland development programs under NPEP? If so, how will it relate to design and implementation of area-based development projects?
2	Project sponsors may want to follow what types of reforms are actually proposed in the final version of the forestry strategy, and possibly enter into policy dialogue about various of those with potential for having direct positive effects in project areas.	What are the prospects for considering and implementing reforms (such as those listed in section 1.3.3 of this report) proposed under the new draft forestry strategy?
<i>Provincial and District Roles</i>		
3	Due to the multiplicity of directions and programs, and pressure on district and provincial authorities to comply with superficial targets, there is a need for unity (or at least harmony), clarity, and more appropriate measures of achieving land use zoning and tenure security in a coherent and more participatory and effective manner. This must be achieved before effective agricultural development can be expected to take place.	How can there be more coordination of policies and programs that would allow a unified and more effective implementation process for upland land use zoning, planning, and tenurial allocations at village, district and provincial levels? Is it the intention of the government to use the Integrated Watershed Management approach to help achieve this?
4	Can area-based projects help build capacity to work with tools like simple spatial information systems at provincial levels, in a manner that has practical and useful applications that are functionally linked through multi-directional information flow with district and central government levels?	Can there be a clear mandate for use of tools like simple spatial information systems to facilitate multi-directional information flow in order to be consistent with participatory bottom-up processes, as well as to facilitate development and implementation of the integrated watershed management approach? If so, how can effective linkages with pilot efforts be established?
<i>Land Use Constraints, Turbulence and Uncertainty</i>		
5	It will be very difficult to rapidly achieve agricultural development targets in upland areas with high levels of turbulence and uncertainty in land use arrangements. Constraints on land use are clear and numerous, while opportunities tend to be vague, distant, and dependent on major livelihood transformations. Yet these issues cannot be resolved without coherent, participatory processes that can help establish a local vision for land use management built on local knowledge and livelihoods - and reflected in zoning - along with strengthening of the local social capital required to effectively implement the vision.	While local household and village uncertainty about where and how much land will be available for what types of land use needs to be reduced as quickly as possible, in order for it to be effective and acceptable it must be done through fully participatory processes. How can this be assured during early phases of implementation in project areas?

ISSUE FOR AREA-BASED DEVELOPMENT PROJECTS	POINTS FOR DIALOGUE WITH THE GOVERNMENT
Disruption of Core Subsistence Enterprise	
6 Agricultural development in most upland areas needs to put first priority on ways to effectively mitigate disruption, increase food security, and build foundations for commercial enterprise through strengthening livestock, garden and NTFP components of core subsistence enterprise.	Although many recent government documents appear to agree with the need to begin development in upland areas with emphasis on strengthening core components of existing livelihood strategies, it would be useful to have more clarity on this issue, so that appropriate criteria and indicators of progress and impact can be agreed upon by all parties involved
Distant Commercial Opportunities	
7 High priority needs to be assigned to identifying existing and potentially important markets, assessing demand for relevant crops and products, and fostering entrepreneurship among farmers, local traders and processors	How and when will the government establish means for seriously analyzing markets and launching information services? Who is responsible, and what approaches are being used, to develop markets and foster entrepreneurship at village, district and provincial levels?
Serious market study needs to be conducted sooner, rather than later, so that it can help inform and direct adaptive research and extension support service activities.	How can urgent needs for market analysis and development best be met in districts and provinces with active area-based development projects, in a manner that will be able to respond to continuing change in conditions after the project ends?
Mechanisms need to be developed for open, transparent, multi-sector efforts to foster commercial enterprise, markets, and entrepreneurial activity at village, district and provincial levels. It may also be helpful to have a focal point for those with product ideas who are seeking markets, as well as for people from outside markets seeking information on local capacities to produce for those markets.	What are current arrangements and visions for coordinating multi-sector (including private sector) efforts to develop markets and commercial production capacity? How can area development projects link with these efforts and help develop capacity in project areas?
Weakness of Institutional Support	
8 Area development projects need to be considered as an opportunity to strengthen emerging institutions and support systems in their project districts and provinces, including their linkages with national systems, and provide an example of how they can be made to work effectively. This supports arguments for having project management units that are embedded within district and provincial operations, rather than separate independent units.	How can management of area development projects be best embedded within district and provincial operations so that they can function effectively while building capacity to provide continuing support services after the project ends?
Emerging National Institutions & Systems for Adaptive and Problem-Solving Research	
9 How can districts & provinces with area-based development projects best access available information and government technical assistance, during project design and start-up, as well as on a continuing basis in a manner that will be sustainable after the project ends?	How can area development projects increase input and technical assistance from NAFRI in project design, and in support for strengthening provincial and district agricultural development strategies and plans, including advice on how to strengthen institutional interactions among local to national levels?
How can experience under area-based projects best contribute to (1) building the national technology knowledgebase; (2) the search for information and experience with relevant technologies; (3) documenting and exchanging experimental and trial results?	
Would it be possible for area-based projects to support development of sites within their project areas to become additional sites for emerging adaptive research conducted by the NAFRI network?	

ISSUE FOR AREA-BASED DEVELOPMENT PROJECTS

POINTS FOR DIALOGUE WITH THE GOVERNMENT

Rice intensification for household safety nets and irrigation	
<p>10 Since paddy rice is potentially one of the quickest-payoff agricultural technologies available, and since small-scale irrigation systems in small upland valleys are often a component of area-based projects, rice production trials, demonstrations and seed multiplication at these sites should be one of the first priority agricultural development activities.</p>	<p>How can districts and provinces with area-based projects best access germplasm, knowledge, experience and training capacity of the National Rice Research Program to establish trials, demonstrations, and seed multiplication operations in appropriate areas? How can small-scale irrigation development in small upland valleys receive higher priority?</p>
<p>In areas where paddies are clearly insufficient, and reliable cash crop options are not yet developed, how much priority should be assigned to upland rice improvement?</p>	<p>Given the importance of rice self-sufficiency in poverty reduction, what is the government's policy about upland rice improvement in areas with insufficient paddy? Does the National Rice Research Program have a mandate to conduct work on upland rice improvement?</p>
Agroforestry and cash crops	
<p>11 Some recent government documents indicate there are still some areas where forest fallow rotational systems are still viable, but policy implementation still aims to end all shifting cultivation and limit land use recognition to not more than 2-3 years of fallow -- these are contradictory positions that make it unclear about how to proceed in agricultural development</p>	<p>Will the government continue to deny recognition of forest fallows in those areas where rotational cycle lengths are still viable?</p>
<p>In areas where fallow cycles are short, improvement of fallows by integrating livestock fodder, various legumes or tree crops, and possibly semi-domesticated NTFPs, show some promise. But as long as they are called 'fallows', they appear to be potential targets for efforts to end all shifting cultivation.</p>	<p>Will improved fallows still be considered 'abandoned', thereby limiting the number of years that it can serve as a fallow? If so, what are the criteria for distinguishing between when a field is in 'fallow' versus being actively managed and producing?</p>
<p>There appears to have been relatively little attention to work with homegardens to strengthen their functions as a household supermarket, gene pool and incubator. Projects could work on such issues beginning with propagation skills, village nurseries and demonstration plantings, but how would such work be reflected in project indicators and measures of poverty alleviation?</p>	<p>How would work to strengthen the base and capacity of homegardens be viewed by the government as a strategy for building food security and foundations for commercial production?</p>
<p>Although some recent government documents appear to downplay the importance of field crops and plantation crops in the uplands, and do not mention smallholder timber-producing woodlots as a priority, these are still mentioned as potentially important options for upland land use in other strategy documents.</p>	<p>What will be the role for field crops and plantation crops in the uplands? What will be the policy toward the types of timber-producing woodlots that appear to be encouraged in the draft forestry strategy?</p>
<p>While there are some interesting arguments to support promotion of production of organic produce, there are still some fairly sophisticated technologies associated with professional commercial production of these products. Should area-based projects try to help search for that technology and support its adaptation, testing and refinement?</p>	<p>How seriously does the government want to promote production of organic produce or other 'chemical free' products? How strong are the mandates for national institutions to work on support for this type of production?</p>

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POINTS FOR DIALOGUE WITH THE GOVERNMENT

Non-timber forest products	
12	<p>NTFP production is a high priority for upland development, but support services are not yet in place. If project areas initiate work on NTFPs, how can such work best relate to national efforts?</p> <p>How soon will NTFP development activities under the new Forestry Strategy to Year 2020 be implemented? Are there area-based project sites that could be pilot areas for early implementation under project funding?</p>
Community-based natural resource management	
13	<p>Is there a role for local monitoring of landscape performance in providing environmental services in area-based development projects?</p> <p>If integrated watershed development will become a major framework for development in the uplands, what will be the role of local communities in monitoring watershed services from agroforestry landscapes, and how can area development projects help develop appropriate capacity?</p>
14	<p>The Lao PDR government is already developing a 'RUPES-type' mechanism to allocate part of the revenue from the Nam Ngum hydroelectric plant to development in its upper watersheds, and is considering subsidizing interest rates for upland activities that help protect environmental services. Could these or similar activities become part of regional pilot projects to develop and test the use of such mechanisms for longer-term rewards for upland poor communities who help sustain provision of environmental services?</p> <p>What is the potential for testing of RUPES mechanisms in the Lao PDR?</p>
Emerging National Systems for Agricultural Extension and Support Services	
15	<p>Efforts under area-based projects need to coordinate with NAFES, its LEAP project, and hopefully the new Sida project, so that area-based project extension development activities can be consistent with, and help contribute to, the development of the extension support system that will remain in place after the end of its project.</p> <p>How can area-based projects both access and contribute information on extension methods, training materials, etc. being developed under these efforts?</p> <p>Entrepreneurship needs to be fostered and facilitated, so that it can be developed in a manner conducive to longer-term mutual benefits among producers, processors and traders, rather than with a focus on short-term exploitation for quick profits. Thus, there also needs to be efforts to avoid monopolies, which are prone to abuse, with the idea of stimulating market environments and not 'company towns'</p> <p>Points for dialogue may emerge from a review of results from the national workshops currently being organized in association with the LEAP project.</p>

ISSUE FOR AREA-BASED DEVELOPMENT PROJECTS**POINTS FOR DIALOGUE WITH THE GOVERNMENT**

An Innovative Approach to Linking Adaptive Research with Extension Support Services	
16	<p>A key element of IUARP progress is the high quality of PAFO staff, who are able to work with and coach district staff, interact effectively with central agencies, and utilize their own growing network of relationships (both within the country and internationally) to stimulate creativity and motivation in project activities.</p> <p>While the IUARP has been a single site pilot project, lessons from its experience are clearly relevant for many other areas. It is useful as a site for field visits by villagers and staff from other project areas, but several have questioned how such activities could be started at other sites. Since many features of IUARP operations are consistent with the approaches being developed under NAFES (farmer preference evaluations, annual cycles, etc), and much of its focus is on research-extension-farmer linkages, it may provide a useful 'model' that can be adapted to other areas as PAFES and DAFES operations are planned and launched.</p>
	<p>How can area-based development projects best help develop a critical mass of skilled core staff at provincial and district levels who can help guide agriculture and forestry development processes, help access outside information and foster, and help coach younger staff -- both during the project and over the longer term?</p> <p>How does the government plan on using the promising results of the IUARP project in other districts and provinces?</p>
Over-Arching Issues	
17	<p>Communication and cooperation among the various projects operating in or nearby to area development projects still appears to be inadequate. There is an urgent need for projects to exchange experience and build synergies, especially where limited capacity in village, district and provincial institutions is being pulled in different directions.</p>
	<p>How can efforts be strengthened to promote communication, cooperation and exchange of experience among projects within and nearby to area-based project districts and provinces, as well as at the broader national level? Could appropriate units of local or central government take more initiative in such efforts?</p>
18	<p>Most area-based development projects - like government programs - usually expect very strong initiative and performance from village, district and provincial staff working with the project. Reasonable incentives need to be used to help them allocate more time and energy to project activities without distorting conditions in a way that is likely to create problems after the project is completed.</p>
	<p>How can reasonable incentives be used to help project-associated staff allocate more time and energy to project activities without creating systemic problems in the longer term?</p>
19	<p>Project design and expectations need to be honest and realistic about rates of agricultural development that can be expected to occur in upland areas. Time frames need to be viable, and criteria and indicators of progress need to reflect both qualitative and quantitative dimensions of livelihood improvement. Over-emphasis on promises for quick boosts in cash incomes are likely to lead to poor attention to fundamentals, as well as to disillusionment if promises are not fulfilled.</p>
	<p>How realistic are the time frames for agricultural development in the uplands and the associated targets of specific area-based development projects?</p>

Appendix 3: Terms of Reference for this Report

Study on Approach to Rural Development in Lao PDR

(For IFAD Country Strategic Opportunity Paper for the Lao PDR)

In view of the rural poverty reduction mandate of IFAD and the government National Poverty Eradication Programme (NPEP), the expected output of the study will be specific recommendations to IFAD for a programmatic approach to rural development and rural poverty reduction in Lao PDR, particularly in areas of upland agricultural development, land allocation and focal site programme, stabilization of shifting cultivation, opium eradication and development of sustainable alternative livelihoods for the rural poor. The recommendations should cover both the policy aspects of these areas and the technology and extension aspects of agricultural development in the Lao PDR, with particular emphasis on poor mountainous provinces targeted by IFAD programs. The study should include specific issues and recommendations for policy dialogue with the Government.

The findings and recommendations of the study should complement the current draft of a new IFAD Country Strategic Opportunity Paper (COSOP) in Lao PDR.

This study will be based on a desk study of materials available from sources of the Government of Lao PDR, including Ministry of Agriculture and Forestry (MAF), NAFRI, sources from the CGIAR research center offices in the Lao PDR and other materials available from Vientiane offices of development organizations and INGOs. The study will mainly focus on lessons, experience and innovations learned from the field operations of the government policies and programmes and programmes and projects supported by external development and research agencies and INGOs in Lao PDR.

The topics of the study will include an assessment of experience and recommendations related to:

- (1) Approach to upland agricultural development, land allocation and focal site programme, stabilization of shifting cultivation, opium eradication and development of sustainable alternative livelihoods to the rural poor;
- (2) availability of agricultural technologies and processes for their further development, refinement and adaptation in IFAD project areas;
- (3) agricultural extension and dissemination support services and processes.

A World Agroforestry Centre (ICRAF) Senior Policy Analyst, Dr. David Thomas, will conduct the study during August 2003, in collaboration with consultancy services provided primarily by staff of the National Agricultural and Forestry Research Institute (NAFRI). During this period, Dr. Thomas will spend approximately two weeks in the Lao PDR consulting and reviewing documents. Final paper will be submitted to IFAD via email from the ICRAF Chiang Mai Office on or before 1 September 2003.

IFAD staff will assist in providing and recommending relevant documents appropriate for inclusion in this review.