Ministry of Agriculture and Forestry
The Sub-Working Group on Uplands Development

Policy Brief #1: Improving Upland Farming Systems for Poverty Alleviation

1. Upland farming transitions

Upland livelihoods and farming systems are undergoing a rapid transition from subsistence-based systems to market-oriented ones. The main factors behind this are a “policy push” aimed at reducing poverty and stabilizing farming systems and a market “pull” coming from increasing regional demand for agriculture products.

This policy brief focuses on how to promote smallholders in this transition so as to maintain upland livelihoods and food security while leading to growth in the agriculture sector for broad-based poverty reduction. In order to achieve the poverty alleviation goals of the Government of Lao PDR (GoL), the major challenge is to enhance policies so they are more flexible, adaptive and responsive to the rapid changes taking place. This could be done by balancing market forces with better regulatory frameworks and monitoring systems, mitigating negative environmental and social outcomes, and ensuring more equitable opportunities for pro-poor growth. The government also needs to consider redefining its role to better plan, coordinate and regulate current and future development in the Northern Uplands.

Agriculture, along with forest-based activities, still provide the main livelihood source for more than 90 percent of the upland population. While recognizing that off-farm alternatives will play a larger role in future village livelihood systems, improvement of local agricultural production systems still remains a key instrument for future poverty reduction efforts (World Bank 2008, NSC-ADB, 2007).

1.1 Market Forces: foreign direct investment and regional trade

The principle driver of change in this transformation has been regional investment from China, Thailand and Vietnam. With less than 25 inhabitants per km2, Laos is in a position to react quickly to market demand by converting suitable available land to productive systems.

Cross-border trade and markets have become critical factors, with regional and domestic traders taking advantage of the strategic position of the northern uplands as a production base for agricultural products in demand (Zola 2008). This trend is reflected in an increasing diversification away from upland rice and specialization into a limited number of marketable cash crops. While the current environment is characterized by extractive development, where raw materials are sent out with no secondary processing, opportunities exist to develop local value-added agro-industry which can be the base for an establishment of local industry.

Investor interest is also creating competition among local government units to attract and retain foreign direct investment. Without clear guidelines and budgets, provinces have adopted an opportunistic approach that places less emphasis on the government’s goal of food security and more on promoting cash crops before many households are food secure. It is important to balance cash cropping and food-security to ensure more vulnerable households are not put at further risk (World Bank 2008).

There are relatively few agriculture concessions in the North partly because provincial authorities have promoted contract farming as an alternative. Without clear guidelines, local authorities have developed various contract models with domestic and foreign investors such as the “2 + 3 model” (NAFRI, 2007).

There have been notable successes in annual crop production using contract arrangements, as models can be worked out on a regular basis. However, when applied to industrial tree crops the model has shown mixed results. Luang Namtha Province has promoted a “2+3” contract-farming model for rubber production since 2003. In implementation, the model reverts to a “1+4” arrangement where companies take over management of the plantation for the first several years. Villagers contribute only land, in exchange for 30% of the future plantation and current wages – if they also choose to work for the company as laborers (Weiyi Shi 2008).

The model has also been criticized for lack of farmer participation and its actual contributions to poverty reduction. (URDP, 2007; LEAP, 2007). In addition, loss of traditional grazing lands, forests and NTFPs collection areas to plantations and agriculture development has
created food insecurity for the poorest (NSC-ADB 2007).

1.2 Government Policies: Push Factors

The main push effect has come from the implementation of five major GOL policies to alleviate poverty and improve management of natural resource in upland areas: 1) Shifting cultivation stabilization 2) Eradication of opium production 3) Land use planning and land allocation and 4) Village consolidation 5) Increasing forest cover.

These programs have been successful in reducing shifting cultivation from 118,900 hectares in 2001 to 29,400 in 2005 (World Bank, DOF). These changes have also allowed the regeneration of forest in the areas more distant from settlements. Despite this success, country-wide poverty is declining but poverty levels in the northern uplands remain static and there is a widening gap between rich and poor (NSC-ADB, 2007).

While the Land Law provides for the adequate allocation of farming land to families, the land and forest allocation and focal area development programmes have caused a reduction in the amount of upland agricultural land available to families for rotational cultivation (NSC-ADB 2007). In addition, the policy to increase forest cover and the associated national level forest category zoning program have potential to reduce the availability of village production areas if such macro zoning is not accompanied by village land use planning to assess village land requirements for livelihood activities.

The impacts of more intensive farming on sloping lands are soil loss, soil fertility decline, increased weed populations, increased labour demands (URDP, 2007) and increasing land conflicts (GTZ 2007). The sustainability of these intensive cropping systems is doubtful under these conditions. Annual commercial cropping is having similar effects in some areas, while cattle and buffalo “security banks” are being depleted as farmers sell livestock to buy machinery (Diagnostic Study, 2008).

In addition to the above long-standing policies, MAF articulated “4 Goals and 13 Measures” in 2006. The first two goals focus on promoting food production/food security and commercial cropping as poverty reduction mechanisms. However the other two goals, focused on stabilization of shifting cultivation and sustainable forest management, can reinforce the negative impacts indicated above.

The World Bank Study (2008) concluded that the current “push-pull combination” has often enhanced each other resulting in positive change but there are some emerging contradictions, including:

- The current framework places more restrictions on remote upland farmers and few on private sector in areas where there is more market access.
- There is not a comprehensive policy framework to guide commercial investment or monitor its implementation.
- There is weak central level support to monitoring and implementation and provincial offices often interpret goals to meet their own needs, capacities and budgets.
- Oversimplification of land use zoning practices is leading to unsustainable practices (e.g. overgrazing in regenerating forest areas).
- Intra-strategy contradictions are arising between different policy goals and programs, e.g., expanding commercial crops such as maize into forest areas.
Table 1: Household Types with a Mix of Assets

<table>
<thead>
<tr>
<th>Type/Group</th>
<th>Characteristics</th>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swidden Agriculture</td>
<td>Diverse land use system which includes upland rice, permanent fields in fallow areas, animal husbandry home gardening and collection of NTFPs</td>
<td>Sustainable when long-fallow possible and good forest exists</td>
<td>Food Security concerns where the government push is strong</td>
</tr>
<tr>
<td>Paddy Rice Cultivation</td>
<td>Rain-fed rice cropping in valley floors, with home gardens, fish raising, small livestock and buffalo, NTFP collection for domestic consumption, construction and income.</td>
<td>Sustainable and diverse systems with low impacts on surrounding forests</td>
<td>Only in lowland valleys with greater access</td>
</tr>
</tbody>
</table>

Table 2: Emerging production systems

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristics</th>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed rotational cropping</td>
<td>Stabilized form of swidden agriculture with 3-4 plot system. Upland rice with cash crops on small scale</td>
<td>Responding to market demand and policy, generally requires less land</td>
<td>Declining yields and soil fertility Increase weeds and use of pesticides</td>
</tr>
<tr>
<td>Modernized rice based farming</td>
<td>Evolving from traditional system, mechanized plowing, high yield varieties and use of fertilizers and pesticides</td>
<td>Increased yields, two crop seasons low impacts and takes pressure off of forests</td>
<td>Increasing use of chemicals</td>
</tr>
<tr>
<td>Annual cash crops in monocultures</td>
<td>Large scale monocultures replacing upland rice, primarily maize, Job's tears, sugarcane,</td>
<td>Initial returns high and reduces poverty,</td>
<td>Declining yields, soil erosion, forest encroachment Long-term risk</td>
</tr>
<tr>
<td>Perennial cash crops in agroforestry</td>
<td>Mix of cash crops with distinct tree component to replace upland rice.</td>
<td>Sustainable and diverse system</td>
<td>Needs significant support financially &amp; technically</td>
</tr>
<tr>
<td>Industrial plantations of perennial crops</td>
<td>Large scale plantations of rubber, teak, eaglewood, tea, Eucalyptus, often in concession arrangements</td>
<td>Low impact due to long-term benefits Good income opportunity</td>
<td>Impacts on watersheds, conflict with large livestock, NTFPs, large labour pool needed for rubber</td>
</tr>
<tr>
<td>Intensified livestock production</td>
<td>Production of cattle and goats and buffalo, with mainly traditional free grazing</td>
<td>Helps farmers to cope with land use restrictions and good income source.</td>
<td>Conflicts with other tree crops, poor pasture and fodder managements</td>
</tr>
</tbody>
</table>

Source World Bank, 2008

2. Who is winning and losing: farmer responses to upland transitions

Farmers are responding in various ways to accommodate restrictions being imposed by the government policies, and where possible to opportunities brought about by regional market demand (World Bank, 2008). Figure 1 shows the interaction between policy, market forces and their outcomes on poverty alleviation efforts.

In remote areas, traditional farming systems are mainly affected by restriction placed by government policy. Because there are few market options, this can cause greater food insecurity and a break down of traditional local institutions without any alternative arrangements (World Bank 2008, NSC-ADB 2007).

Where market access is greater and there are less restrictions, development of cash crops appears to be a key driver of poverty reduction and livelihoods improvement where production inputs are available at reasonable costs to farmers. The challenge is to sustain these trends in the face of declining yields.

Table 1 shows the typology of upland farming systems and Table 2 shows a continuum of household types based on different livelihood assets available to them (World Bank, 2008). The range of farming systems is not static, or specific to one group or location, as they may be found in different provinces, districts, village clusters and villages.

The principal outcomes in terms of income and livelihood security for the five types of households are thus as follows:

- Type A and B households will likely benefit in the transition or at least are unlikely to experience livelihood security problems.
- Type C households can be either winners or losers and are households that are facing restrictions in land access and crop production but have opportunities of generating alternative incomes either in the farm or non-farm sectors. Success is likely to depend on functioning community institutions.
- Type D households are likely to lose in the transition simply because they are lacking market opportunities to cope with restrictions. In other words, they represent a group of households where the
**Table 2: Household Types with a Mix of Assets**

<table>
<thead>
<tr>
<th>Household type</th>
<th>Comparative advantage</th>
<th>Natural capital</th>
<th>Comparative advantage</th>
<th>Human capital</th>
<th>Financial capital</th>
<th>Physical capital</th>
<th>Social capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>High</td>
<td>High, stable, secure</td>
<td>Conducive</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>B</td>
<td>Medium/high</td>
<td>Medium, stable, secure</td>
<td>Neutral</td>
<td>Medium/High</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>C</td>
<td>Medium</td>
<td>Medium/high, decreasing</td>
<td>Conducive / not conducive</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>D</td>
<td>Low/medium</td>
<td>Medium/high, decreasing, insecure</td>
<td>Not conducive</td>
<td>Low/Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>E</td>
<td>Low</td>
<td>Medium/high, stable, secure</td>
<td>Not conducive</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>F</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

*Population density, roads, market access.  b Land, tenure security.  c Household size, composition, skills, ethnicity.  
d Cash, credit, savings, livestock. e Machinery, equipment.  f Village organizations, producer organizations.

Source World Bank, 2008

The World Food program study (2007) on food security and vulnerability found that chronic malnutrition has not decreased in the past decade, one out of every two children in rural areas is chronically malnourished and that upland ethnic groups are the most food insecure.

Research has also found that village re-location and consolidation programs, being implemented by district authorities under the umbrella of the focal site development program, impact on land use and farming systems. It found inequities in land distribution between different groups, unintended encroachment of subsistence and commercial cropping into forest areas, reduction in village protection forest areas, reduction in the availability of NTFPs and deforestation of water sources for irrigation (URDP, 2007).

### 3. Future Trends and Scenarios

In order to develop options for future policy and programme direction, it is not only important to understand the current situation, but also the trajectory of future trends. Scenarios are not meant to predict the future but can illustrate the need to plan ahead to create a coherent vision for the uplands and to be adaptive in such a dynamic environment.

A number of implications arise when using the scenarios (see Table 3) to analyze trends for enhancing future policy and its implementation including:

- **Impacts of large-scale hydropower and mining on agriculture production.** The inundation of large areas of arable land in the North as well as the increasing number of mining concessions might have a more adverse affect on the agriculture sector than investment or policies. How can this agriculture planning be coordinated with hydropower and mining?

- **World food crisis, rising fuel costs and the potential of another regional recession.** The most important implication is to ensure that programs are focused on food security and local demand rather than relying solely on regional markets. It is also impor-
Table 3: Future Scenarios

<table>
<thead>
<tr>
<th>Stay the course</th>
<th>Crisis Scenario</th>
<th>Sustainable scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Large FDI investments with few regulations</td>
<td>• Rising fuel prices and recession in world economy impact on food prices and food availability</td>
<td></td>
</tr>
<tr>
<td>• Watershed level impacts from transformation of natural forests to industrial tree plantations</td>
<td>• Current inflation and problems in regional countries (i.e., Vietnam, Thailand, China) lead to decrease in FDI</td>
<td>• Regulation and management of foreign investments reduce negative environmental impacts and result in more equitable development</td>
</tr>
<tr>
<td>• The development of a hydropower and mines impact availability of agricultural land.</td>
<td></td>
<td>• Adaptive policy allows for specific interventions in different locations</td>
</tr>
<tr>
<td>• Continuing consolidation of villages and out-migration to other provinces</td>
<td></td>
<td>• Coherent land use planning system used for strategic decision-making at province and district levels</td>
</tr>
<tr>
<td>• Land use planning and allocation still problematic</td>
<td></td>
<td>• Farmers have better access to government services, production inputs and more on- and off-farm options</td>
</tr>
</tbody>
</table>

Note: June 22, 2008

Figure 2: Policy Options for improving upland farming systems

1. **Increased in-migration.** If large plantations for rubber and other industrial crops are approved, issues emerge regarding labour shortage and in-migration to fill the gap. As currently seen in the north, a number of migrants from regional countries are arriving. Such migration patterns and possible social conflicts need to be considered in any strategy.

The main recommendation is to take a more adaptive and flexible approach to policy that encompasses different dimensions such as: food security, markets, access, improved production and recognizes the diverse systems found in the uplands. In addition, there is an urgent need to better coordinate plans and activities with other line agencies and at different levels.

For example, in remote areas where basic infrastructure has not yet been established, a more flexible integrated rural development approach could be applied. In areas where market access has been achieved, there is a need to establish better frameworks for monitoring and regulating negative environmental and social outcomes (World Bank 2008).

There is also a need to improve land use planning approaches to create a framework for agriculture production and natural resource management and use (i.e. forests and NTFPs) that balances forest cover and land availability for production purposes for an expanding population as well as for current market opportunities.

**4. Policy Options for Managing the Uplands Transition**

The diagram below shows the overall entry points for policy enhancements and designing a programme based approach for the northern uplands. These different elements should be interlinked to provide support to farmers in this uplands transition.
4.1 Promote options for diverse farming systems

Food security should be the starting point for any policy and programme interventions. An important aspect will be to strengthen food security goals by encouraging diversity of farming systems rather than a reliance on mono-cultures and single-occupation farming (het pua asip). Some examples of how this can be achieved include:

- Promoting home vegetable gardens to improve food security (WFP, 2007)
- Promoting small livestock production, particularly targeted to women for income generation and household consumption
- Transitioning from upland rice into viable alternatives that do not place families in riskier positions. This should build upon existing food for work schemes, off-farm income generation or through sale and domestication of NTFPs (Zola 2008)
- Better management of wildlife and its sale as forest foods are an important source of household food security in the North (Khrahn and Johnson 2007).
- Agro-biodiversity to increase food sources around the farm as well as production through better soil and nutrient management (Balsubramanian 2008)

It is also important to build capacity of farmers and district staff to understand the consequences of being dependent on mono-cultures as these cause soil erosion, degrade natural resources and put farmers at risk of fluctuating prices. Information and communication processes such as the work done by the NAFRI-NAFES Agriculture Information Management Working group to provide a range of options to farmers rather than solely technical recommendations can be an important way to frame extension messages for farmers.

Improved reward systems such as tax incentives or accelerated land titling for good land use practices (i.e. using direct mulching or agro-forestry) and restrictions on bad practices (i.e. monoculture maize production) need to be developed.

4.2 Link production to market demand

There is a need to ensure that production is linked to emerging market opportunities found in specific locations. Extension staff and even production groups should have better knowledge and understanding on market chains and market information. There is also a need to encourage and develop mechanisms to directly link farmers to markets

For example, The Agro-enterprise Development Process (AEDP) as piloted by SADU, helps farmers to identify (a) which products are in demand, and (b) constraints that can be addressed along the market chain. Rather than village groups, the village cluster (Kum Ban Phattana) is used to exchange experiences among villages, and a create a forum for on-going exchange of information between farmers and the private sector. The process thus enables scaling-up through (a) selecting the right products; (b) enlisting inputs from the private sector for dynamic scaling up; (c) ensuring exchange of information within the kum ban.

District staff are actively encouraging the establishment production of groups in-line with MAF policy to enable producers to have more bargaining power. However, groups formed, appear to be lacking advice and direction from the district extension staff on how to manage and sustain their enterprises (Diagnostic Study, 2008). This is an area where extension staff will require training if they are to effectively support local production group formation.

4.3 Support to Local Agro-business and Basic Infrastructure

Local agro-businesses are slowly developing where commercial production has been established, e.g., maize drying facilities in Houn District of Oudomxay, peanut hullers in Xieng Khoung, and NTFP products in Oudomxay. Despite this, the vast majority of agriculture production leaves the country with little value processing. Thus, policies and programs are required to promote and support local value addition. This would improve product quality, capture investments within the country, and also assist in upgrading standards for grading and phyto-sanitary control.

Better road and basic infrastructure is another proven method to improve upland livelihoods. The Sida supported basic access road program and the Shifting Cultivation Stabilisation Pilot Program access track activity provide good examples of how public services and infrastructure, research, and extension services can be expanded to village cluster areas. These access roads open new opportunities to farmers and can mitigate the land availability and equity problems that are associated with village relocation programs.

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Larger budget allocations should be provided to support basic infrastructure including basic access roads, water and sanitation and education infrastructure to village areas that are beyond the current road network. Investments should be coupled with preventive
social and environmental measures that mitigate the impacts of open road access.

4.4 Institutional support mechanisms

There are a number of areas where better institutional support mechanisms can enable and promote improved production systems.

**Regulating agri-business**

Restrictions and monitoring also need to be applied to companies and investors, e.g. investment guidelines, follow-up compliance and monitoring, and adopting international standards or codes of practice. Some current examples include:

- The Promotion of Organic Farming and Marketing in Lao Project adapted organic farming standards to the Lao context to help facilitate trade of organic products.
- NAFRI will apply Geographical Indications into Lao intellectual property law so that famous Lao products such as Bolaven coffee and Khao Kai Noy rice are protected.
- GTZ and VECO are working with Chinese rubber investors in Bokeo to develop a code of practice for rubber planting.

**Strengthening of production groups**

Efforts should be focused at two levels. First to establish a policy and implementation framework to enable production groups and associations to attain a legal status. Second, group capacity development is needed to ensure they can function effectively in areas such as negotiation with traders, business planning and post harvest production.

**Reorientation of the extension system**

The overall capacity and mechanisms for the extension system to effectively deal with the rapid changes taking place also need to be reconsidered.

The current policy of MAF to develop Technical Service Extension Centers at the Kum Ban level is an opportunity to improve the interaction between farmers and extension agents. However, the current focus on infrastructure is problematic. It is possible to have a functional agriculture extension system without building Technical Service Centers that are difficult and expensive to maintain. Enhancing mobility of extension workers to meet with farmers by providing per-diems, motorcycles and fuel rather than buildings may be a better approach (Foppes, 2008). This could build upon existing experiences of PCADR-PASS, IFAD-RLIP in Attapeu and VECO in Bokeo.

In terms of inputs and credit, the government should consider reorienting its role to cooperate with traders and production groups to provide efficient and effective inputs and credit to farmers. The government has an important role to play in monitoring seed quality and pricing instead of being directly involved in input supply and credit.

Another consideration is the role of provincial and district extension staff in contract farming. There is a need to develop capacity and mechanisms for them to monitor and regulate contract arrangements rather than act as an intermediary between the private sector and farmers.

**Decentralized research system**

Adaptive research should be continued. The NAFRI strategy (2008) emphasizes the need for a decentralized research approach to respond to farmers’ needs as well as working together with the extension system. Experiences from PCADR in Xayabouli and the National Rice Research Programme demonstrate the importance of researchers working directly with farmers and extension staff to ensure new agriculture technologies are adopted on a wide-scale.

Research can also play an important role to better understand the impacts of this transition so policy can better respond to emerging challenges and opportunities. The policy based research and knowledge capitalisation being carried out by NAFRI and the Agriculture and Forestry Policy Research Center should be further strengthened. Some areas for further investigation and intervention could be:

- Inventorying concessions in the North (agriculture, forestry, hydropower, mining)
- Real extent and number of people still practicing shifting cultivation
- Understanding poverty trends and who is winning and losing in the current transition.
- The government’s role in seed production and credit provision
- Production group development and education needs
- Land issues arising from land use planning, village consolidation and land allocation
Key documents and references


NAFRI, NAFES and NUOL. 2006. Improving Livelihoods of Shifting Cultivators in Lao PDR; A Sourcebook Volumes I and II. NAFRI: Vientiane.


WFP. Comprehensive Food Security and Vulnerability Analysis. WFP: Vientiane.


About the SWGUp Policy Brief Series

The purpose of the policy briefs is to initiate dialogue among SWGUp members around key livelihood issues related to agriculture and natural resources management, with the aim of reducing poverty in the Northern Uplands. It is expected that the policy briefs will contribute to enhancing GoL policies to be addressed by the interventions under the future programme based approach to be developed. Three policy briefs that will be developed over the next three months include: 1. Improving upland farming systems for poverty alleviation; 2. Sustainable land and natural resource management; 3. Supporting institutional arrangements and government services.

This policy brief was produced on behalf of the Sub-Working Group on Uplands Development. The views expressed in this document are the views of the consultants at this stage and do not necessarily reflect the views of the SWGUp itself or the Ministry of Agriculture and Forestry.