3. PROJECT RATIONALE AND DESIGN CONSIDERATIONS

A. Concepts

3.1. The objective of the proposed project as set out by ADB/FAO identification mission was to reduce shifting cultivation and thereby reduce poverty and conserve natural resources in two upland provinces. Implicit in this aim was the understanding that shifting cultivation, as practiced in these areas, was adversely affecting the environment and degrading the soil and water resources. As well as the native flora and fauna, and should be reduced or eliminated.

3.2. Land Degradation. Previous studies in Lao PDR and elsewhere have indicated that the degree of land degradation from shifting cultivation depends on a number of local factors, including the steepness of land, the type and depth of soil, the degree and type of plant cover, the relative lengths of the fallow and cultivation periods, the cultural practices used, rainfall patterns, etc. It is generally accepted that a fallow period of 10 to 20 years, corresponding to a population density of 20 to 25 inhabitants km2, is the limit beyond which the system becomes unstable. Beyond these critical limits, crop yields decline and the ratio of labor input to output increases sharply. This is due to insufficient regeneration of soil fertility and increased labor demand for weeding under fallow periods which are too short. This situation has only been reached in a few areas in these provinces. There was little observable evidence, either on the landscape or in streams and rivers that land degradation was occurring to any significant extent. This is confirmed by the first preparation Mission which took place at the beginning of the wet season when a shifting cultivation system is most susceptible to natural resource degradation, as well as by subsequent Missions. Research also shows that relatively low rates of soil loss occur on upland areas under traditional practices of shifting cultivation. In most cases the land is only used for one or two consecutive crops and there is minimal soil disturbance with hand planting of crop seeds into dibbled holes. The introduction of diversified and settled farming systems under the project would therefore not be expected to greatly reduce current soil degradation. However, it would prevent future land degradation which would arise as a result of increased population density, which would be expected to cause resource instability in an accelerated shifting cultivation systems.
3.3. Forest Degradation. Severe deforestation has occurred in both provinces. It appears that much of the deforestation has come from commercial logging, which has been practiced in an exploitative, rather than sustainable fashion. Over the centuries, shifting cultivators would have also caused reduction of forest resources, although their present practices are to cultivate deforested areas or areas which have already been logged for commercial timber. The development of settled agricultural systems which would produce much higher household incomes would ensure that farmers have little need to exploit forest areas outside or within their defined village boundaries and as a community could better manage the portions of remnant forest within village boundaries.

3.4 Shifting Cultivation Conflict. The current policy of the GOL to eliminate shifting cultivation seems to have been formulated with insufficient regard for the interests of the shifting cultivators. Without clear proof, shifting cultivation has been blamed as the primary cause of the destruction of forests. Government policies have therefore been oriented towards restricting shifting cultivators to certain areas and/or moving them entirely away from presumed “forest areas” (not necessarily forested), and thus taking away much of their livelihood resource base. There is only now an emerging concept towards an integrated approach to resource use, where the shifting cultivators are considered the central actors in resource management and development.

3.5 Socio-Economic Conditions of Rural People. Despite local variations, villages in upland areas are universally poor. Access to many villages by roads or tracks is often impossible in the wet season or very difficult at any time. Many villages lack some of the basic community facilities, such as clean drinking water supplies, medical dispensaries, primary schools, electricity supplies and communication facilities. This situation is symptomatic of a poor local economy and an agricultural system, which does not meet household food consumption needs and generates little cash to purchase the basic necessities for family life. The fact that the present shifting cultivation system condemns rural people to continued poverty is a more compelling reason for developing a diversified and settled form of agriculture than any adverse aspect of natural resource degradation.

3.6 Shifting and Settled Upland Cultivation. The government strategic to reduce the perceived adverse effects of shifting cultivation and poor socioeconomic conditions in upland areas has focused on increasing paddy cultivation areas, encouraging the planting of timber (teak) and fruit trees. Promoting livestock rearing and in some instances resettling villages located in remote upland areas to lower areas. There is a need to broaden and refocus this strategy such that the reduction in shifting cultivation is part of an overall program for the development of the region with more decision making power being given to the local people. The voluntary movement of people from very remote areas is, in some instances desirable, in that it places them in closer contact with transport, social services and markets. However, this must be accompanied by greatly increased opportunities for farm production and employment to ensure food security and higher household incomes. At present, however, there are limited opportunities to significantly increase paddy or lowland rainfed cropping areas and the topography is such that lowland areas are insufficient to meet the needs of the rural population. In addition, the policy, to plant wood trees has resulted in the wide-scale planting of teak on land that could be used more efficiently for agricultural purposes. Furthermore, there are no tested and proven technologies that are being widely introduced to create sedentary agricultural systems and generate high cash incomes on land presently used for shifting cultivation. Many projects have tested many technologies. However, there has been limited on-farm testing of these technologies in a farming system. While the concept of a settled diversified farming system is still valid, the project would leave to proceed cautiously with a blend of further in situ technology testing and gradual expansion of promising technologies in subproject areas to make it a practical possibility.

B. RATIONALE

3.7 The upland areas of northern Lao PDR are very mountainous. Although the shifting cultivation of upland rice in these areas for subsistence purposes has been practiced by ethnic groups for centuries, the landscape is generally not suitable for sedentary arable agriculture. Less than 15% of the area is below 15% slope and about 40% of the area is above 50% slope. The landscape is therefore much more suited to a form of agriculture that is primarily based on perennial crops (fruit trees and industrial shrub and tree crops), livestock raising on improved sown and natural pastures and a range of forestry-based tree crops. These production systems can be generally practiced on landscape slope between 15-50% slope while steeper areas should be left to regenerate to forest. Ultimately these forested areas on higher slope could be managed by the local communities for timber and other non-timber forest production purposes. Under such a system of land use the area of permanent forest in each village will increase substantially.
3.8 Food production for self-sufficiency is very important to the local inhabitants of this mountainous area. The cultivation of upland rice is, however, very labor intensive, leaving little opportunity to grow cash crops and undertake other income generating activities and thereby condemning the people of the area to a life of poverty. The production of upland rice is also very inefficient in terms of both returns to labor and resource use. Fortunately, population density is low in these areas and reasonable sized areas of agricultural land (below 45% slope) are available for a more diversified, income-oriented form of land use. Sufficient potential also exists to expand irrigated paddy land to compensate for a reduction in upland rice cultivation thus maintaining area self-sufficiency.

3.9 The difficulty of transition from the simple shifting cultivation of upland rice to a diversified form of agriculture based on cash cropping and income generation rather than subsistence food security cannot be underestimated. An enabling environment has to be developed to overcome all the constraints that people have to such a major shift in farming systems. The constraints that have to be overcome during transition include: lack of food security; lack of access to markets and demand for products, lack of credit for investment in diversified forms of agriculture where income generation can have a long timeframe; lack of awareness and technical knowledge for implementation of such farming systems, both in the government support services and the farmers; lack of land ownership, lack of capacity of village leadership to plan for village area development, and adverse social circumstances in villages that create problems in development, such as ill-health, high population growth rates, high infant mortality, and literacy.

3.10 Alternative sedentary farming systems exist that would be phased in over the project period, supported by strengthening of the essential support services and removal of the major constraints. Under the project, the new farming systems envisaged would reduce shifting cultivation significantly, generally improve the environment and protect natural resources. Careful participatory planning between the local people and government would also ensure a better life where the local people take full responsibility for the sustainable use of their resources.

C. STRATEGY FOR RESOURCE DEVELOPMENT

3.11 The development strategy for upland areas of the two provinces would be based oil strengthening the role and capacity of the target population to manage their resources in all integrated way by creating in enabling environment which would overcome their resistance to change and provide positive incentives to adopt a diversified, market-oriented farming system. Such a development strategy would be guided by the following principles:

a. **Priority for Local People.** In the use of natural resources local people should have priority. They should have the primary right to use all, local resources, and they should, in a participatory way, be supported in planning the most appropriate use of the natural resources as well as improving the long-term efficiency and sustainability of these resources. Only when large off-site costs can be clearly demonstrated should the use of natural resources by individuals be restricted.

b. **All land is to be allocated.** All land, including forest land and water areas, should be allocated on a permanent basis (long-term rights to use) to individuals or communities, within defined village boundaries. Only if tile land is allocated to the people, can they develop a long-term perspective towards land use and invest in land development.

c. **High Level of Food Security, and Food Self-sufficiency.** A high level of food self-sufficiency for staple foods should be maintained during transition to a commercial farming system, even if comparative costs of production arc higher compared to other places in or outside the country. The remoteness of the area, the poor infrastructure, and the difficulties in the country regarding intra-regional exchange of goods suggest high priority be given to producing food in or close to the place of consumption.

d. **Need for Cash Income.** Improving the livelihood of shifting Cultivators requires increasing cash income. This income needs to be generated not by- replacing food production by commercial crops, but by increasing overall production. This is possible only if access is provided to additional land to improved and diversified technologies and extra finance.

e. **Gradual change.** Slash and bum cultivation is deeply rooted in the tradition of local people, and most of the possible alternatives require relatively long timeframe to generate returns. The proposed change in land use is enormous and poses a major developmental challenge. Only a gradual change in farming systems, with a smooth transition, would find acceptance by local people.
f. **Diversified Systems.** Each farm needs a high degree of diversification to respond to the different requirements. Some of the major advantages in production diversification can be: (i) spreading labor demand over different seasons in the year; (ii) more efficient use of resources and higher returns to labor; (iii) mutual use of by-products in different production systems, for example, animal manure for crops, crop residues for animals, or mulch for soil conservation, etc.; (iv) stabilizing the flow of income over time, by a mixture of activities with short-term return (such as annual crops), medium-term return (such as livestock, industrial crops or fruits), and long-term returns (such as timber); and (v) mitigation of risks due to crop failures and changes in market prices and demand.

g. **Financial Attractiveness.** Investments in production systems and land use changes need to offer the prospect of an immediate financial return or clear possibility for future financial return. Investments, which are purely for resource conservation, such as soil erosion prevention, have little chance of adoption by farmers, even if those measures would be financially viable in the long-run.

**D. DESIGN CONSIDERATIONS**

3.12 **Rural Poverty.** The project has been designated as a poverty project on the basis that more than 60% of the rural people within project areas are below the poverty line, using the World Bank poverty line indicator for Lao PDR (para. 2.68). This implies that project interventions have to be specifically targeted at the poorest section of the rural community. However, Lao PDR is one of the poorest countries in the world. All rural people are poor and any classification of poverty within the country is only a relative measure. This project must lift the socioeconomic condition of all people, whether classified as poor, very poor or extremely poor. Within all world communities there are people who remain poor because of personal traits, irrespective of the preferential help they may receive. Rural development is led by people who are innovators and entrepreneurs. Exclusive targeting of the poorest people would not be appropriate as it would result in a welfare project rather than a project to collectively uplift the socioeconomic well-being of the whole community. Thus the project would be designed to ensure interventions that would specifically benefit the poorer sections of the community and create an enabling environment that would allow them to overcome poverty, but many of the interventions must and will benefit all.

3.13 **Subproject Areas.** The proposed project area covers Luang Prabang and Houaphanh provinces. However, as the project would introduce new concepts and technologies for integrated area development and because of the need to be very cost effective and respond to inherent variation in local needs and opportunities for development, it is proposed that a conservative but comprehensive approach, would be taken. The project would be initiated in a few selected subproject sites that provide a representative cross-section of the situation/conditions throughout the whole province, with subsequent expansion to other subproject sites during project implementation. This approach is in line with the government approach of using "focal areas" to catalyze rural development within provinces, and has the benefits of requiring a major involvement by provincial and district government agencies in rural development and providing, them with implementation experience for a subsequent expansion phase. Accordingly, Five subproject sites, three in Luang Prabang province (in Xieng Ngeun, Chompet and Viengkharn districts) and two in Houaphanh province (both in Xam Neua district), were selected for the First project phase. An additional seven subproject sites, three in Luang Prabang province (in Ngoi Nambak and Phoukham districts) and four in Houaphanh province (in Viang Thong, Xiengkho. Xamtay and Viengxay districts) have been identified for incorporation during the second phase of project implementation (Map 2) (refer also paras 5.3 and 5.4). It is to be noted that Five districts in Luang Prabang province and one district in Houaphanh province were excluded from the second phase because of the presence of some projects concerned with shifting cultivation stabilization.

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1For example, a direct return is given, when soil erosion prevention is done using a bush, tree or grass, which be directly used or sold. A possible financial return is given. If investments lead to a marketable asset, which can be sold in case of need. Fruit or timber tree plantations are attractive to farmers because they know that these plantations can be sold at any stage of maturation.