

## CHAPTER 4

### SOCIO-ECONOMIC CHANGES AND IMPLICATION OF THE GOVERNMENT'S POLICY FOR LAND USE PLANNING

Demographic, socio-economic change and implication of the government's policy that mainly characterized by the increasing population and government's policy interventions are seen as the main factors for the changes of land use and future land use development in many countries. However, there is still insufficient evidence about the relationship between demographic and socioeconomic changes since quantitative studies dealing with these interactions are still rare. This chapter presenting the comprehensive study that investigates many factors underlying, demographic and socioeconomic change for the Pak Ou district, especially the study villages.

#### 4.1 Demographic features

Pak Ou district consist of 8 sub-district with 49 villages and population about 25,986 people. Lao group cover 10,384 people, Khmu group cover 9,096 people and Hmong group cover 6,506 people with the total of 5,092 families, Lao group family is 2,215 families, Khmu group is 1,921 families and Hmong group is 962 families.

During the last decade before 2000s, the study area was consisted of 5 villages namely: Phonsavang, Sanghai, Thinchaleon, Ban Luang and Phoncheang village, these villages have no exactly village boundary as shown in the maps (Figure 4.1).

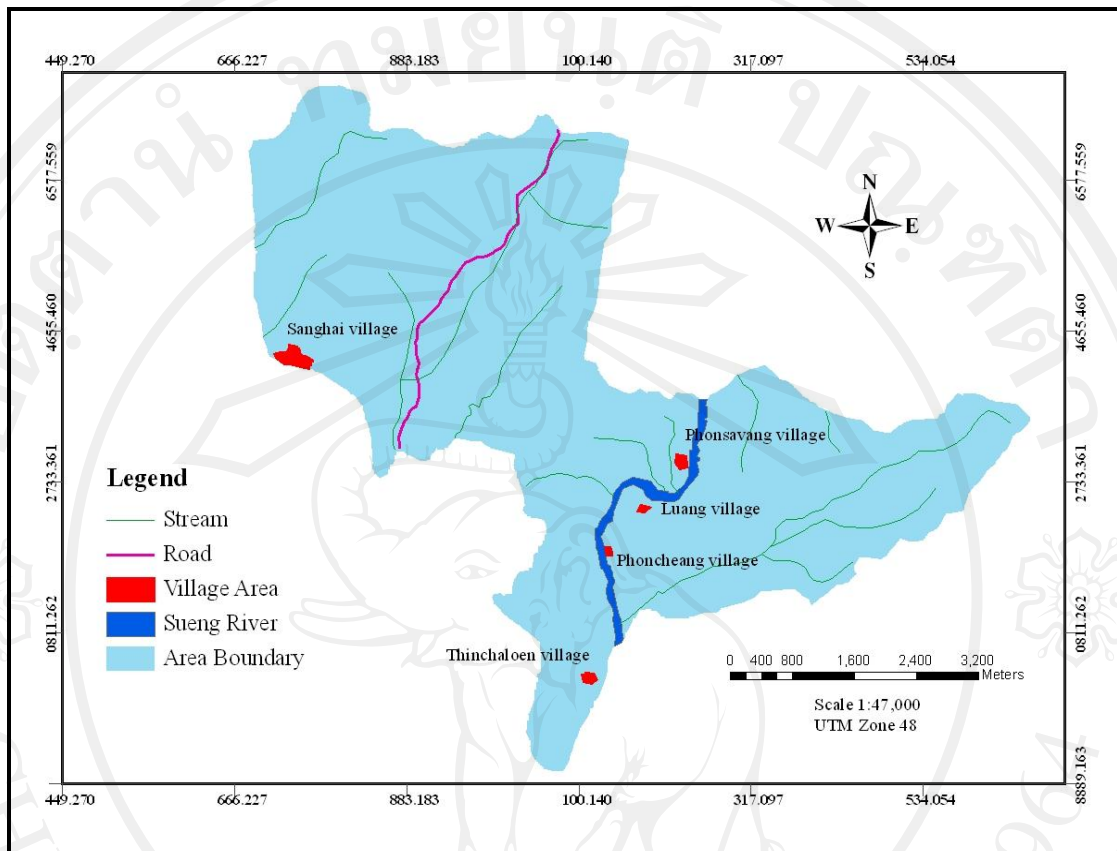


Figure 4.1 Administrative boundaries before village relocation and resettlement

After the implementation of the government's policy on village relocation and spontaneous resettlement of upland villagers to lowland villages to be a cluster village development. In 2001, Ban Luang and Phonchaeng village have been clustered to Phonsavang village and the number of villages in the district has declined, especially in the study area (Figure 4.2) but increased in the population.

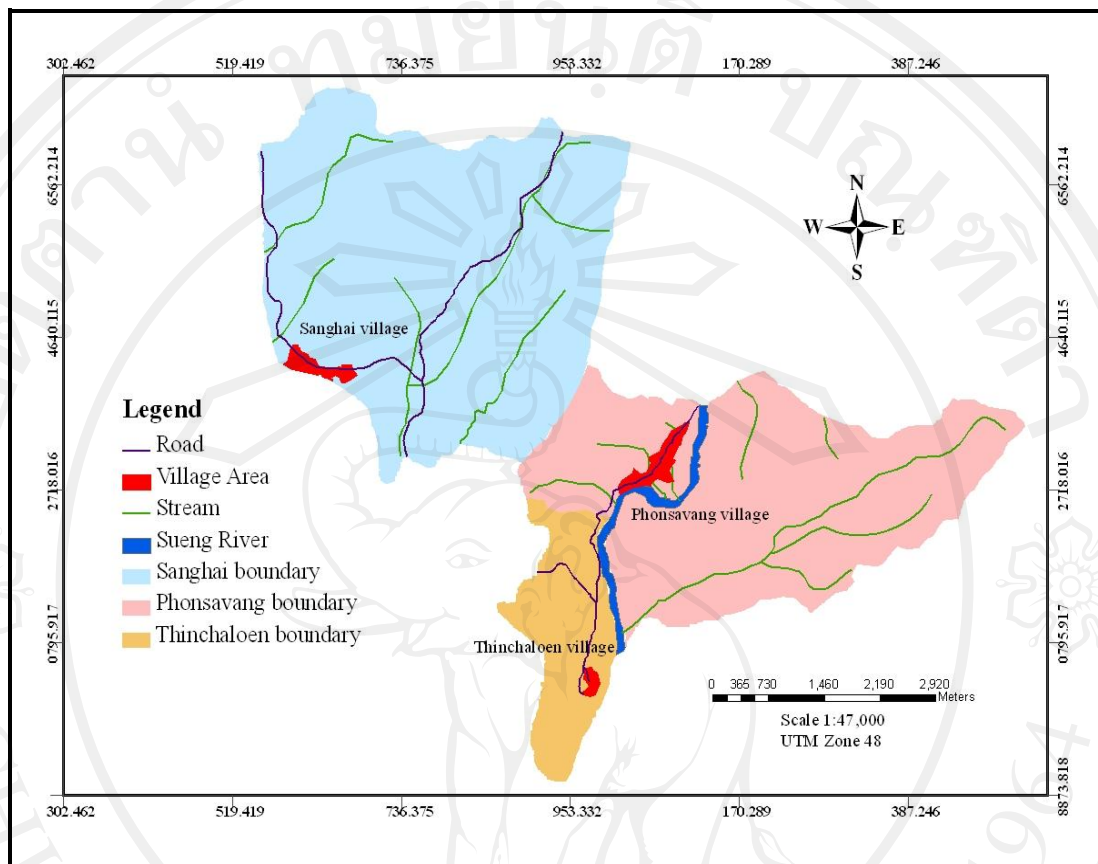


Figure 4.2 Administrative boundaries after village relocation and resettlement

The study area composed of three villages which are: Phonsavang, Sanghai and Thinchaleon village. The total number of households and population during the period 1990 to 2010 (Table 4.1) were increased from 173 households and 843 people in 1990 to 319 households and 1,609 people in 2010. While population movement in the study area has been historically dynamic and the demographic patterns during the last decade have been particularly volatile within the village. Changes are particularly significant for Ban Luang and Phonncheang village's population who abandoned their old villages and moved to Phonsavang village to establishing more permanent residence where they can access to the road, electricity and other facilities.

Table 4.1 Number of households and population of the study area in 1990 and 2010

Village	1990		2010		Relative Change			
	Household	Population	Household	Population	Household		Population	
					Increase	(%)	Increase	(%)
Phonsavang	53	226	128	650	75	141.51	424	187.61
Sanghai	80	347	118	612	38	47.50	265	76.37
Thinchaleon	40	270	73	347	33	82.50	77	28.52
Total	173	843	319	1,609	146	84.39	766	90.87

Source: DAB (2010)

From the above table, the increasing of household and population of three villages are rapidly increased. The total number of household of three villages in 1990 was only 173 households. In the year 2010 were increased to 319 households constituted to 146 households (84.39%) increased from the year 1990 to 2010.

The population was also rapidly increased; the total population in the year 1990 was only 843 people increased to 1,609 people in the year 2010 constituted to 766 people (90.87%) increased during the last twenty years. When compared the annual population growth rate in the study area to the national annual population growth rate found that the annual growth rate of the population in the study area is 4.54% that higher than the national annual growth rate in double while the national annual growth rate is only 2.5%.

According to population density, it relies on initial population density of 1990 and change in population density (1990 to 2010). This factor is linked to a group of factors such as need of cultivable land where subsistence agriculture is the main

practice. Population growth and population density is a major determinant of land clearing in shifting cultivation through the growth in requirements for food and other agricultural products. But it is important to notice that the role of population factors in land use changes can also vary from one setting to another depending on the local pattern and human occupancy.

#### **4.2 Overview of Lao socio-economic change**

World Bank (2010) reported that during 1987, the government of the Lao Peoples' Democratic Republic (Lao PDR) embarked upon an ambitious program of economic reform. In doing so, it took policy steps also taken at around the same time by Vietnam and earlier by China, where a reform process had begun in 1975. Agriculture remains the largest sector of the Lao economy, generating 56% of Gross Domestic Product (GDP) and employing more than 80% of the work force.

In the early 1990s, the Lao PDR was among the ten poorest countries in the world, according to a World Bank ranking with a per capita gross national product (GNP) in 1991 of just US\$ 200 per person. Its labor force is poorly trained and educated, its infrastructure severely damaged from years of inadequate maintenance and its ability to feed itself precariously dependent upon the weather.

Despite the many obstacles to economic development that remained in the early 1990s however, in little more than a decade, starting in 1979 the government had deliberately shifted the focus of its economic policy away from socialist goals and has made great strides. Many state-owned enterprises which had been draining the nation's treasury through subsidies were privatized and tax collection was boosted



tremendously, helping to bring the fiscal deficit under control. Liberal laws on foreign investment and trade were passed, precipitating a surge of investment activity. Prices of many commodities were freed from government controls, domestic transport restrictions were lifted and the cooperative farming system was ended.

Many reforms were carried out successfully during the late 1980s, but the Second Five-Year Plan ended with economic performance lagging well behind planned achievements. Not least among the disappointments was the need to import rice during the droughts of 1987 and 1988, underlining the fact that an objective identified over ten years earlier sustained self-sufficiency in food had not been met.

In the early 1990s, agriculture remains the foundation of the economy. Although a slight downward trend in the sector's contribution to gross domestic product (GDP) was evident throughout the 1980s and early 1990s from about 65 percent of GDP in 1980 to about 61 percent in 1989 and further decreasing to between 53 and 57 percent in 1991 a similar decrease in the percentage of the labor force working in that sector was not readily apparent. Some sources identified such a downward trend from 79 percent in 1970 to about 71 percent in 1991 but both the Lao PDR's State Planning Commission and the World Bank reported that 80 percent of the labor force was employed in agriculture in 1986. Available evidence thus suggests that the percentage of the labor force employed in agriculture in fact remained relatively steady at about 80 percent throughout the 1970s and 1980s.

By 2010, shortfalls in socioeconomic development included an inadequate infrastructure and underdeveloped human resources. The country's per capita income in 2010 was US \$1010. Agriculture mostly subsistence rice farming dominates the

economy employing an estimated 75% of the population and producing 33% of GDP. Laos relies heavily on foreign assistance and concessional loans as investment sources for economic development. In 2010, donor-funded programs accounted for approximately 8.5% of GDP and 90% of the government's capital budget. In 2010, the country's foreign debt was estimated at US \$5.8 billion. Following its accession to power in 1975, the communist government imposed a harsh, Soviet-style command economy system until 1986, when the government announced its "new economic mechanism" (NEM). Initially small in scale, the NEM was expanded to include a range of reforms designed to create conditions conducive to private sector activity. Prices set by market forces replaced government-determined prices. Farmers were permitted to own land and sell crops on the open market. State firms were granted increased decision making authority and lost most of their subsidies and pricing advantages. The government set the exchange rate close to real market levels, lifted trade barriers, replaced import barriers with tariffs and gave private sector firms direct access to imports and credit. These economic reforms led to increased availability of goods and economic growth that has continued to the present day (ADB, 2001).

The economy of Laos is now essentially a free market system with active central planning by the government similar to the Chinese and Vietnamese models. However, unlike China or Vietnam, Laos has negligible industrial capacity an undeveloped and underproductive system of agriculture and increasingly relies on its rich natural resources to earn much needed foreign reserves. In particular, the hydropower, mining, precious metals, and timber sectors have attracted major

investment from Thailand, Vietnam and in the last decade, China and Vietnam is now the largest source of foreign direct investment in Laos.

The government relies heavily on foreign assistance for public investment, and despite escalating revenues from the natural resources sector, shows no signs of significantly reversing this trend. Tourism remains a bright spot of the Lao economy, offering real future potential, solid growth, and substantial job creation (World Bank, 2010).

#### **4.3 Socio-economic aspects of the study area**

The ultimate purpose of the field survey on socioeconomic change of the study area was conducted to collect qualitative and quantitative information to help a better understand and explain the relation of the land use and land cover change which is the core issue of this study. Hence, understanding trends in resource dynamics required historical information which can be achieved using qualitative and quantitative data collected through interview and group discussion with selected informants believed to have a good understanding of the issues of interest.

Based on field observation and general historical information gained from participants during the survey found that in the past decade the economy of the study area was dependent on traditional agricultural production and the main economic activity for the people in this area still plays a huge role in contributing to livelihoods and food security at household level, subsistence agriculture especially lowland rice, upland rice cultivation and some vegetables along the river bank during the dry season, agriculture remains the main occupation of the majority of local people, crops



cultivated are functions of the quantity and the distribution of rainfall. Due to the fact that the region records two main seasons (wet and dry) per year, only annual crops that are able to complete their life cycles during the rainy season are cultivated without irrigation. Most of the crops are primarily produced and harvested for subsistence. Nevertheless, a part of the harvest is sometimes sold in order to purchase additional household needs and the livelihoods was not much improved.

Table 4.2 Comparison of socio-economic aspects of 3 villages in 2010

Socio-economic aspect	Village Name		
	Phonsavang	Sanghai	Thinchaleon
Average of Household education	Secondary	Secondary	Secondary
Average of Household size (Person)	6	5	5
Average of Family labor (Person)	2	2	2
Average of Land size holding (Hectare)	2.37	2.75	1.82
Average of Rice yield production (Ton)	1.68	1.62	0
Average of Farm income (Lao Kip) 1\$= 7,990 K	11,258,000	6,187,000	25,547,000
Average of Non-farm income (Lao Kip) 1\$= 7,990 K	5,603,000	20,783,000	5,874,000

Source: From field survey and data analysis

According to an interview and group discussion found that the socio-economic conditions of Phonsavang, Sanghai and Thinchaloen village were nearly similar as shown in (Table 4.2). In term of household size, the average household number of one family is 6, 5 and 5 persons in Phonsavang, Sanghai and Thinchaleon

respectively. The education level of people in the three villages are the same being match “secondary School” Land size holding were 2.3, 2.75 and 1.82 ha in Phonsavang, Sanghai and Thinchaleon respectively, but they were difference in rice yield production being 1.68, 1.62 and 0 ton because of Thinchaleon village has no lowland field for rice cultivation. Farm income was 11,258,000; 6,187,000 and 25,547,000 Kip/year and Non-farm income was 5,603,000; 20,783,000 and 5,874,000 in Phonsavang, Sanghai and Thinchaleon respectively.

In recent years, socio-economic conditions of this area still being dependent on agricultural production, lowland rice cultivation and mixed fruit orchard are the main source of their families’ food and farm income. Some of the farmers still practice on shifting cultivation on their fields for rice and cash crops during the rainy season. Some farmers who have more family labors are also occupied in small industrial factories, tourism services to earn money as their non farm income and their livelihoods well-being have been improved when compared to the past years before the government’s policies implementation.

#### **4.4 Alternative land uses**

The transformation of land into teak plantation and mixed fruit orchard could be a way out of areas available for shifting cultivation has been declining and has forced farmers to intensify their land use through shortening of fallows and extending of cropping periods. It was found that fallow periods shortened from an average of 8 years in 1970 to only 3 years in 2003. The reason that farmers change alternative to land use is due to short fallow period leading to degraded vegetation, increased weed

population, depleted soil fertility and low yielding of upland rice is has been observed. So, the farmers replaced upland field and fallow by teak plantation and mixed fruit orchard. Rapid increase in teak plantation has taken place since 1993-1997 as called “boom” in teak planting; profuse teak plantations have been raised on fallow land and upland fields. Large scale teak planting is attractive to farmers due to long term immense economic benefits from this timber species about 300 USD per cubic meter and 900 trees can be harvested from one hectare area, high labor productivity compared to food crops and assertion of a stronger claim for long term use of lands not only for the economic gain, there is also a socially pragmatic reason behind the increase of teak plantation in the study area.

Mixed fruit orchards have also expanded since lemon trees have been introduced in 1993 by Thinchaleon village head man and expanded to other villages along the Nan Sueng river bank included Phonsavang village. Agricultural production has resulted in the transition of a subsistence-based economy to a market-based economy. For example, the traditional upland rice-based system has been replaced by cash crops-based systems especially one involving mixed fruit orchard. This change is in response to government’s policies aiming to discourage swidden systems. Farmers can earn more income as their main on farm income from selling mixed fruit orchard production as resulted from household interview found that annual farm income of Phonsavang village is 11,258,000 Kip (1,409 USD) and Thinchaleon village is 25,547,000 Kip (3,197 USD) it is higher than the national annual per capita of about 1,250 USD. This is the reason that farmers transformed their farming from a system based on upland rice cultivation and moving away from

subsistence agricultural production towards commercial production and market orientation.

The lowland field pattern has been changed rapidly in recent years in the study area, due to both increased market pressure and intensification of agricultural practices. Rice production has increased significantly in the last decades. For a number of reasons, including the development of irrigation and the use of high yielding varieties. However, the lowland rice production is not a commercial agriculture for farmers they just cultivate for home consumption only.

#### **4.5 Implications of policy interventions for land use changes**

The government has a policy of encouraging villagers who practice shifting cultivation to adopt sedentary forms of agriculture. The aim is to reduce the area of steeper sloping land being used for crop production through the adoption of permanent crop production and maintenance of forested land. The strategies for doing this are:

1. Allocating agricultural land on a temporary basis to provide farmers with land security.
2. Encouraging farmers to invest in inputs to improve the productivity of allocated land
3. Increasing the area of land developed for wet rice production.
4. Encouraging the planting of annual and permanent economic crops.
5. Increasing villager participation in commercial tree planting and wood production.

The current rationale for promoting sedentary farming is a consequence of changes in upland agriculture. These changes include reduced fallow periods and more intensive cultivation of sloping land. The effect of this more intense land use is that more top soil is being lost, soil fertility is declining and productivity is beginning to decline.

#### **4.5.1 Land policy**

The land allocation process in Lao PDR began in the early 1990s and has been progressively codified into law (Ducourtieux et al, 2005). Initially, households could enter into an agreement for the management and use of degraded forest or non-forest land for agriculture, forestry, and livestock production “in order to upgrade the village family’s living conditions” (PM Decree No.169/1993). After three years, if the household had complied with the conditions of the contract, it could receive permanent tenure, including the right to transfer and bequeath land and use land as collateral (PM Decree No. 169/1993). The land allocation process was further consolidated into a national program under PM Decree No. 3/1996. A specific decree on Allocation of Land and Forest Land for Tree Plantation and Forest Protection (PM Decree No 186/1994) also enabled allocation of land for these purposes.

The Land Law 1997(amended in 2003) and Forestry Law 1996 (amended 2005 and 2007) provide the current framework for the eradication of shifting cultivation and the encouragement of sedentary agriculture, including tree plantations. The state authorizes individuals and households to use agricultural land in accordance with a local allocation plan and objectives, with the maximum area available to a

household based on the type of agriculture and the number of labor units in the household labor force. The maximum area per labor unit is 25 hectares (though in practice no household is allocated this much land) this includes three hectares of degraded forest land where plantation activities are to be focused. Degraded forests are “forests” that have been heavily damaged to the extent they are without forest or barren that is land previously used for shifting cultivation. If a household does not utilize the land allocated to it within three years it may lose access to the land. The law seeks to return a plot which has been abandoned for over three years to the village committee to be redistributed within the village to farmers who can make use of it (Ducourtieux et al, 2005). As such, many farmers have planted teak on the plots they do not currently need in order to be able to keep them for the future (Kolmert, 2001 and Midgely et al, 2007).

The new framework created the security of tenure that enabled and encouraged investment in tree plantations. However, the process also created an incentive for households to convert existing swidden land (that would be classified as degraded forest land) into plantations before the allocation process was carried out.

As part of its land policy, the Government of Laos has been engaged in systematic campaigns to reduce and eventually eradicate shifting cultivation and opium cultivation (Government of Lao, 2005). Shifting cultivation has previously been identified by the Government as one of the main causes of forest loss especially, in the northern provinces. While officials have acknowledged that under certain circumstances, shifting cultivation may be less problematic than rotational systems where fallows are limited to three to four years. In February 2010 the Government



reaffirmed its stance to eradicate shifting cultivation completely by 2010. Commercial tree planting provides a major alternative to shifting cultivation. (Government of Lao, 2010).

#### **4.5.2 Promotion of teak planting**

Private teak plantings have been recorded in northern Laos since the 1950s (Midgley et al, 2007). In the past these have largely been confined to areas close to roads or rivers which allowed efficient access and transportation of logs to mills. Households engaged in shifting cultivation had exposure to teak plantation.

After the formation of the Lao PDR in 1975 the Government of Laos has made tree planting a national priority with a variety of laws and decrees supporting and promoting plantation development. The National Socio-Economic Development Plan (2001-2006) strongly promoted tree planting for commodity production and set a national target of 134,000 hectares. To achieve this target the Government's strategy was to provide a range of incentives including the allocation or lease of land for tree planting, creation of property rights to planted trees, land tax exemption for registered plantations, and free distribution of seedlings to farmers and farm organizations. Teak plantation were identified as a promising option for subsistence farmers. The Forestry Strategy to the year 2020 (Government of Lao, 2005) again included extension for tree improvement, plantation management and cutting methods, support for farmer organizations, marketing and product development, providing additional land, financing farmers involved in teak planting and the formation of teak growers' groups. Since 1990 there has been a so-called "boom" in teak planting in Luang

Prabang Province with the total area increasing from 500 ha to over 10,000 ha (Kolmert, 2001 and Midgley et al, 2007).

#### **4.5.3 Relocation and resettlement policy**

An exodus of mountainous population to lower elevations, populations in other sub-districts in lower elevation have increased. Unlike in the past, resettlement often meant shifting of residential area, but retaining access to vast agricultural land in the upland areas, the recent migration is more permanent as the villagers abandon their upland villages including residential and agricultural lands.

What this indicates is a trend of dramatic population decline in the upland areas and rapid concentration of population in lowland areas as well as in sub-districts including Ban Luang and Phonchaeng village and concentration of population in the district centre and areas along the major roads.

While population movement in areas of the study area has been historically dynamic, the demographic patterns during the last decade have been particularly volatile within the district. Changes are particularly significant for upland population who abandoned their old villages and moved to areas of lower elevation, establishing more permanent residence in those areas. On internal resettlement and the involvement of international aid agencies in Laos suggest strong policy implications on internal resettlement (Baird and Shoemaker, 2005). In particular, government policies that were implemented during the last decade, which focus on restricting expansion of shifting cultivation, opium eradication, security control, delivery of development services and cultural integration as major catalyst of resettlement (Baird

and Shoemaker 2005). Baird and Shoemaker (2005) support the notion suggested by Goudineau (1997) that there is no such thing as voluntary resettlement in Laos that all resettlement is directly or indirectly affected by the government policy.

Based on field interviews in three villages, villagers that interviewed raised several reasons for their migration during the period of 1960s. War had been the initial reason of migration and relocation of villagers in this area. However, more recent resettlement was caused by access to development services. International organizations began to assist development of rural infrastructure such as roads, water supply system, irrigation canals, and health clinics in the early 1990s. This began to attract upland villagers to areas near the roads, which was often located in lower elevation. In addition, the government also encouraged small and scattered villages to merge into one administrative unit, village consolidation (Baird and Shoemaker, 2005) to integrate upland minority ethnic groups into mainstream Lao culture and rural development. There have also been efforts to develop “focal sites” and area perceived to have potential for development.

In Pak Ou district, relocation of upland villagers began in the 1990s as rural development projects reached the upland areas. European Union in particular played a significant role in providing development services and rural infrastructure in remote villages of this area. Rural infrastructure development gradually induced relocation of upland villagers into areas of lower elevation. It was during the mid 1990s that more pressures were exerted by the local authorities to relocate upland villages by merging small villages and delineating resource boundaries through the

land and forest allocation policy. The central government policy to stop shifting cultivation was also prioritized in the district

The exodus of upland population to the lowland areas which occurred in the last 10 years was also facilitated by increased cash crops production and economic opportunities in the lowland areas. Cash crops production began in the mid 1980s as the government of Laos shifted from centrally planned to market economy. New crop varieties were introduced from Thailand and China which included high yielding non-glutinous rice, maize, sugarcane and other vegetables. Chinese merchants and investors also provided capital and technical support to farmers through contract farming, which further promoted expansion of cash crops production particularly in the lowland areas. Furthermore, increased cash crops production in the lowland areas began to attract more people from the upland. While wealthy Khmu villagers purchased land in the lowland and mobilized labor to cultivate paddy rice and cash crops, economically less well off Khmu villagers became agricultural wage laborers in lowland villages.

#### **4.5.4 Land use and forest allocation policy**

Since 1986, Lao PDR has undergone a rapid economic transformation under the government strategy towards “new economic mechanisms” with the aim of poverty eradication, one of the government’s development priorities has been a substantial land reform, particularly in upland areas, farmers are being settled on government allocated lands due to the perceived need to stabilize shifting cultivation practices. A market-oriented economy has led to the shifting cultivation strategies

widely practiced over centuries but often perceived as ‘backwards’ being replaced with other forms of land use including tree plantations.

The Land and Forest Allocation (LFA) program of Lao PDR was developed during the early 1990s and was introduced nationwide in 1994. It is a land reform policy that delineates clear village boundaries and classifies village forests and land resources. The key approach of the LFA program is to reduce illegal logging and shifting cultivation in village forests. Against the policy backdrop of the 1994 government decision to eliminate shifting agriculture by donors and international organizations provided financial and technical support to introduce the LFA program in the northern part of Lao PDR by discouraging shifting agriculture and promoting cash crop-based sedentary agriculture. The LFA program aims to enable farmers to raise agricultural productivity and income by ensuring land tenure security and to encourage village communities to protect and use forest resources sustainably. It is strategically guided by the Provincial Agriculture and Forestry Office (PAFO) and implemented by the District Agriculture and Forestry Office (DAFO).

One example of the changes to local livelihoods is the profuse planting of teak on land designated for agriculture by the program. There are four main reasons for the growth of teak: it is useful for building furniture; its market value is high; teak is easier to manage and requires less labor than upland rice farming and rice yield has become too low under the LFA program’s induced shortening of fallow periods. In addition, incentives to obtain rights for the long-term use of land have encouraged individuals to switch from annual crop farming to planting teak trees through the LFA program, temporary land use certificates are issued for a period of three years and

renewed if lands are appropriately used and managed. Thus, once teak is planted, it serves as a socio-economic and legal safety net for local people.

Teak plantations represent farmers' rationality based on traditional knowledge and responses to the LFA program as well as their adaptation strategy to the erosion prone hilly lands and the rising demand for income sources. The Lao government's policies have affected land use and can be the driving force behind land transformation. It also demonstrates that discrepancies exist between policy interventions and local realities as a result of the LFA program, the land area for shifting cultivation has significantly decreased.

#### **4.5.5 Trade and investment policy**

While government policies had definite impacts on upland people's relationship with their environment and space, other factors also contributed in the transformation of land use and socio-economic environment in this area, the rapid growth in the small industrial and services sectors since the introduction of the reform process in the mid 1980s. Road development and opening free trade of the regional in 1992 had significant impact on local agricultural production as this not only opened market for local farmers but also brought in new crop varieties, technology, investments and labor from China. An introduction of new crop varieties and agricultural inputs significantly improved agricultural production for lowland farmers. Many small and medium industrial factories have been installed into this area such as baked clay factory, tile factory, metal factory, tobacco factory, oxygen factory



and drinking water factory these factories play important role in employed hundreds of local workers and effect directly on farmers' livelihoods in this area.

It can be concluded so far that both of socio-economic changes and the government's policy interventions are directly and indirectly to the local people's livelihoods in negative and positive way, land allocation induced land shortage, shortening of fallow and lower yields and is often identified as one of the main causes of impoverishment. The changes has exerted on the traditional production and livelihoods of local people and seem to be a substantial shift from self-sufficient livelihoods to employment in an industrial production mode, job creation and the provision of income generation opportunities for local people as well.