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INTERLINKAGES BETWEEN ENERGY, ENVIRONMENTAL CHANGES AND LIVELIHOODS IN LAOTIAN HOUSEHOLDS

Findings from 14 Focus Group Discussions

FINLAND FUTURES RESEARCH CENTRE
FFRC eBOOK 9/2012

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ISBN 978-952-249-147-3
ISSN 1797-1322

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1. INTRODUCTION

This publication presents and discusses the findings of 14 focus group discussions (FGD) conducted in different parts of Laos in early 2011 as a part of the project "Interlinkages Between Energy and Livelihoods – Data, Training and Scenarios for Sustainable Energy Planning in Laos (INES)", which is a project funded by the Finnish Ministry for Foreign Affairs and Nordic Development Fund in the framework of Energy and Environment Partnership (EEP) Mekong in South East Asia. The INES project was implemented by Finland Futures Research Centre (FFRC) in cooperation with the Ministry of Energy and Mines of Laos. The overall objective of the project is to improve the capacity of decision makers in Laos to promote sustainable long-term energy planning. In addition, the aim has been to provide qualitative and quantitative data on rural and urban resources and livelihood strategies and increase the knowledge of energy resources and use, and sustainable use of natural resources in Laos. In the quantitative survey 2100 households in Laos were interviewed. This e-publication summarizes the results of the qualitative data from the 14 FGDs and covers the following topics: household energy use and management, livelihoods and changes in livelihoods, environmental changes and food security as well as perspectives on economic development over the next 3–5 years.

Throughout the report a comparison between Southern and Northern provinces has been made. Geographically speaking Northern and Southern Laos differ from each other in terms that Northern Laos is to a large extent mountainous and less densely populated with large areas covered by forest, in comparison to Southern Laos which is mainly low land, covered by agricultural land to a larger extent and has a denser population. Thus, the settings for livelihoods and living conditions differ between Northern and Southern Laos which is also reflected in the FGD results. Where applicable, also a comparison between on- grid and off- grid villages has been made. Electrification changes the livelihood options of people and can have far reaching effects on the lives of people. In addition, the report has been divided into rural and urban parts to make a comparison between the livelihoods and coping strategies between rural and urban Laos as well as a reflection about how people's lives have changed as they have moved from rural Laos to Vientiane capital.

The structure of this report follows largely the discussion topics of the FGD questions defined prior to the field work. However, as energy, environmental issues and livelihoods of people are interlinked in many ways, it is not always possible to separate these issues and divide them strictly under their own headings. Thus, the interlinkages of these themes are reflected throughout the publication.

2. FIELD SURVEY METHODOLOGY

The questionnaires were designed by Finland Futures Research Centre's (FFRC) survey team, Indochina Research Ltd (IRL) and an independent consultant. The qualitative field research team comprised of 3 members: one moderator, one note taker and one provincial coordinator. The survey locations were divided into:

I) Rural Community, i.e. people living in provinces, and
II) Urban Community, i.e. people migrated to Vientiane from rural Laos and who had not lived in the capital longer than 5 years

A participatory approach has been applied to all 14 FGDs. The moderator started the FGDs by introducing the objectives of the study. Participants were also asked to introduce themselves giving their name, age and workplace. The moderator explained the objectives and contents of the FGDs. Results of all discussions were recorded by voice recorder and notes were taken by note-takers. In total, FGDs included 112 participants (45 males and 67 females). The FGDs covered the following topics. Annex 4 outlines the detailed list of FGD questions.

1. Household energy sources and management
2. Livelihoods and food security
3. Changes in livelihood conditions
4. Coping strategies
5. Environmental changes
6. Vision on economic development over the next 3-5 years

I) Rural Community

The criteria for FGD participants required people who were in charge of making daily decisions of energy and food consumption in their households. Therefore, the FGDs involved women more often than men. Relevant authorities at provincial, district and village levels were consulted. Participants from rural communities were selected by the Village Authority (VA). The rural FGDs were conducted in five different provinces and within each province the plan was to involve an on-grid and an off-grid community. However, Champasak and Luangprabang provincial authorities selected two on-grid villages per province. The other three provinces (Huaphan, Phongsali and Savannakhet) selected one off-grid and one on-grid village each. The 10 rural FGDs involved in total 30 men and 54 women and took place either at the village office, village meeting hall or in temples. Table 1 outlines the details of the rural communities involved and the number of participants.

Table 1. Survey locations and timelines, rural communies.

Province	District	Village	No. FGD respondents (Male /Female)	Date FGDs conducted
1. Huaphan				
On-grid	Viengxai	MeungLeuad	8 (3/5)	24 Jan 2011
Off-grid	Samnoua	HouayAoung	8 (3/5)	25 Jan 2011
2. Phongsali				
On-grid	Phongsali	Homsavang	8 (2/6)	28 Jan 2011
Off-grid	Bounnoua	Ngaynoua	8 (3/5)	29 Jan 2011
3. Savannakhet				
On-grid	Xaibuli	Hadxaysoung	10 (3/7)	10 Feb 2011
Off-grid	Outoumphone	Vangkhane	8 (3/5)	11 Feb 2011
4. Luangprabang				
On-grid	XiengNgeun	Pakvaed	9 (4/5)	31 Jan 2011
	PakOu	Hadkhor	9 (3/6)	01 Feb 2011
5. Champasak				
On-grid	Pakxe	Dornkhor	8 (3/5)	08 Feb 2011
	Sanakhoumman	Souvannakhiri	8 (3/5)	08 Feb 2011
Total number of participants (M/F)			**84 (30/54)**	

II) Urban Community

Urban community respondents required equal number of men and women and the discussions with the two different sexes were conducted separately. In addition to being relatively new migrants, the urban participants involved were people with low level of education and low income. Urban community participants were recruited from different villages in Vientiane Capital by IRL support team. The purpose of the urban FGDs was to analyze life in the urban settings; reasons for moving to the city, energy management in the city, food security and their survival strategies. Four urban FGDs involving 15 men and 13 women were held. The four urban FGDs were conducted at IRL office meeting room. The group respondents had different occupations and had migrated from different villages. Table 2 outlines the details of the rural communities involved and the number of participants.

Table 2. Survey locations and timelines, urban community.

Location	No. of group	No. of FGD respondents	Date FGDs conducted
2 Male Groups, total 15 participants			
IRL, VTE office	1st group	8	03 Feb 2011
IRL, VTE office	2nd group	7	13 Feb 2011
2 Female Groups, total 13 participants			
IRL, VTE office	1st group	7	04 Feb 2011
IRL, VTE office	2nd group	6	04 Feb 2011

Picture 1. FGD Moderator and participants discussing in Souvanakhiri village in Champasak Province.

Table 3. Summary table of community and group respondent selection criteria.

Province	No. Communities and No. Groups/ Communities	Respondent criteria	Total no. of respondents
1. Vientiane Capital (Urban community)	4 groups: 2 male groups and 2 female groups.	- Migrated from rural Laos (other provinces) - Living in Vientiane between 1-5 years - Low income level job: tuk-tuk driver, construction worker, waiter/ waitress, guard, gardener, maid, massager, beer girls and etc. Excluded: highly educated people, well-off, private company staff, civil servants and international organization staff - Each participant must be from a different village	6-8 respondents/ group
2. Huaphan province (Rural Community)	2 Communities, 1 group per community Comm. 1: access to electricity, distance from district capital not >50km and road accessible by car both dry & wet season. Comm. 2: No electricity. Distance not > 70km and road accessible by car in dry season	Mixed group of 5 women and 3 men: - 1 Deputy or Director of Village Women Union - 1 female head of household - 1 woman who owns retail shop or runs small business at village - 2 women who are farmers - 3 married men, farmer and not part of village authority. - Respondents no older than 50 years and have been living in this village at least 3 years	8 participants/ group
3. Phongsali province (Rural Community)	No. of groups and criteria same as above	Respondent criteria same as above	8 participants/ group
4. Savannakhet province (Rural Community)	No. of groups and crite-ria same as above	Respondent criteria same as above	8 participants/ group
5. Luangprabang province (Rural Community)	2 Communities. 1 group per community Both communities have access to electricity and distance from district capital not >50km. Road accessible by car both dry and wet season.	Respondent criteria same as above	8 participants/ group
6. Champasak Province (Rural Community)	2 Communities. 1 group per community (2 groups/2 Comm) Both communities have access to electricity and distance from district capital not >50km. Road accessible by car both dry and wet season.	Respondent criteria are same as above.	8 participants/ group

3. RURAL COMMUNITIES

3.1. Household Energy Management

I) On-grid Communities

All respondents realized that getting a connection to the electricity grid had had a big influence on the economic development of the community and it was considered as a very important change. All female respondents were very satisfied with the fact that the electricity had reduced women's work load and saved a lot of time from e.g. rice milling, carrying water and weaving in the evening. A woman in Huaphan province said:

> *"If we would not have electricity I do not think our village would have changed this much. Before there were only a few concrete houses and the access road was very narrow and uneven. When we got connected to the electricity grid everyone wanted to build a nice house. They sold some cattle in order to afford a nicer house and improved access road to fit the big trucks and cars. We can weave until midnight and watch TV at the same time."*

A member of village LWU in Hadkhor village, Luangprabang:

> *"Earlier women had so much work to do every day. We spent 1-2 hours every morning on rice husking, 1 hour carrying water from river to home and we could not work at night. Our houses were very dirty too because we did not store much water - only carried enough for cooking. Washing had to be done by the river. Now many households have dug a well and with the electric pump up we can get as much water as we need."*

Male respondents said that electricity had brought their family economic development by allowing them to start small businesses such as furniture shops, rice mills, motorbike repair shops, pumping water to vegetable gardens and processing food. The biggest benefit from electricity was the access to better communication and information from TV, radio and telephone. This saves a lot of transportation costs and time.

Rice farmers in Southern provinces said irrigation system was the biggest benefit gained from electricity. It allowed them to plant more than one crop a year and the price for electricity consumed was not very high compared to income benefits, the farmers said. Phongsali province in the North has seen big changes after getting connected to the electricity grid in 2002. Many houses, shops, restaurants and guesthouses have been built. A woman who owns a restaurant and a guesthouse said:

> *"I was born and have lived here for 37 years. A few years after we got electricity, we tore down the old wooden house and built a new house. We started this business because we knew there would be more tourists coming to Phongsali town. At the beginning there were only 4-5 guesthouses but this year two new guesthouses have opened by the Chinese and there are about 4-5 Chinese restaurants in Phongsali town now."*

Most people said that in comparison to the benefits received from electricity the problems remained trivial. The main problem mentioned was that the price of electricity increased every year. The complaints about increased prices were heard in both North and South. The cheapest monthly tariff for a family of 6 people with a few lights, some electrical appliances such as rice cooker, TV, refrigerator, water pump and a few fans was about 20 000–50 000 kip. For a family running a small business (rice mill, furniture shop, ice maker or retail shop) the cost was about 100 000 -250 000 kip per month. Another problem mentioned was unreliable electricity metre. An old woman in Hadkhor village in Luangprabang province complained that her household did not use much electricity but her monthly tariffs were higher than other respondents' who had similar electrical appliances and more people living in the household:

> *"I am not happy and do not understand why electricity bill for my house is always higher than for the others'? I have asked the staff in charge but they do not know. Each month I pay at least 45 000 kip. I only have 4 people living with me, I never use other electrical appliances apart from one refrigerator, four lights only at night and for watching TV in the evening."*

Most people had also experience from electricity often being cut off which caused them some difficulties – particularly for their businesses. In Huaphan province, where there is a grid from Vietnam, the electricity was cut off in the rainy season almost every time there was a heavy rain. Sometimes the electricity would be off for 1–2 days. Luangprabang is more often cut off due to extension of the transmission line to other villages (in 2011). Savannakhet had minor problems - the longest cut off being about one day and only in the rainy season. Champasak is often cut off for about 1-6 hours when it is raining and often in the dry season too, mainly in April. Since electricity is often cut off each household has candles and torches and for business unit a generator. Respondents said that the cost of using generator is higher than using electricity.

People who felt the largest impacts from electricity outages were the Phongsali people. All respondents complained about their losses from unstable electricity supply. It damaged some of their electrical appliances, especially water heaters and computers. A man who makes noodles for living said:

> *"I bought every expensive and high capacity machine for noodle making because I expected to produce more, but the capacity of electricity here is not sufficient. I cannot use these machines at all. This year it is getting worse and I am thinking about moving to run my business in Oudomxai province instead."*

Phongsali people are the ones most affected by water shortage, too, because their electricity is generated from using hydro power. Water supply for Phongsali town is pumped to a tank on a nearby hill and gravitates to the town residences. NamNgay micro hydro supplies the electricity for Phongsali and is facing a significant problem because of water shortage in the reservoir. Every year during the dry season this hydro power cannot provide sufficient power to the town, and every night the electricity is turned off between 9 pm -6 am and often also during the day time. In the weekend there is barely any electricity. That means the water supply also often runs out because there is no power for pumping water. The government

of Phongsali province has to spend large amount of money on fuel to supply power and water to town with a generator. A person complained:

> *"This is a very bad situation for the whole town. We are living with no water supply and no electricity. How could we improve our economic conditions to support the government strategy? This dam started to operate in 2002 and it was working well for only the first few years. I think (we have the water shortage) because too many rubber plantation have been planted in this province and I have also heard that all land near the reservoir has been replaced by rubber plantations of senior civil servants."*

Most respondents preferred not to use electricity for cooking although about 50% of respondents had an electric cooking pot (electric wok) which they used only when they were in a hurry. They had noticed that the electric pot consumed a lot of energy and therefore they preferred firewood and charcoal rather than the electric pot. On the other hand, all respondents used electric rice cooker to cook rice because it was easier than ordinary pot.

Picture 2. Charcoal is still widely used for cooking in on-grid and off-grid villages and in both rural and urban Laos.

The price of charcoal had increased from 13 000 kip/15kg bag in 2010 to 13 000 kip/12kg bag in 2011, and firewood from 1000 kip/5 pieces to 1000 kip/3 pieces. Improved Lao cooking stoves have been introduced in most villages visited but not all have been interested to use them. In each group only 1-3 persons were using one. Most female respondents complained that the improved cooking stoves were too slow to heat up and only small pieces of charcoal would fit in. However, one of the villages visited in Champasak province was producing an improved cooking stove (clay stove). It has become a well-known stove in this province and all respondents in both villages visited were using it. They had also noticed that it heated up slowly but on the other hand it saved half of the charcoal a traditional stove consumed.

The firewood collected these days were the small branches of trees in their own rice paddies and gardens. Most villages visited in Savannakhet and Champasak used charcoal more often than firewood because it was easier to buy as sellers brought it to the villages every week at a cost of about 10 000–13 000 kip per 15 kg bag.

Table 4. Summary table of energy source in on-grid villages.

Name of on-grid community	Sources of energy	Energy used for
Huaphan Province Viengxai District	Electricity grid	Lighting, TV, refrigerator, washing machine, ironing, rice cooker, frying pan, water boiler, rice mill and pumping water for household use and agriculture. *Business: motorbike repair shop, weaving, furniture shop and machinery for making aluminium plate and iron pots.*
	Candles, torches	During power cut
	Firewood	Cooking and heating in winter time
Phongsaly Province Phongsaly District	Electricity grid Generator (hotel/guest house)	Lighting, TV, refrigerator, washing machine, ironing, rice cooker, frying pan, water boiler. *Business: motorbike repair shop, hotel/guesthouse, restaurant and noodle making.*
	Candles, torches	During power cut
	Firewood, charcoal, gas stove	Cooking and alcohol production
Luangprabang Province XiengNgeun District	Electricity grid	Lighting, TV, refrigerator, washing machine, ironing, fan, air conditioner, rice cooker, frying pan, rice mill and pumping water for household use and agriculture. *Business: motorbike repair shop, weaving and furniture shop.*
	Candles, torches	During power cut
	Firewood, charcoal	Cooking and alcohol production
Luangprabang Province PakOu District	Electricity grid	Lighting, TV, refrigerator, ironing, fans, rice cooker, frying pan, rice mill and pumping water for household use and agriculture. *Business: weaving, rice mill, tailoring and furniture shop.*
	Candles, torches	During power cut
	Firewood, charcoal	Cooking and alcohol production
Champasak Province Pakxe District	Electricity grid	Lighting, TV, refrigerator, ironing, fans, air conditioner, rice cooker, frying pan, pumping water for household use and agriculture products (irrigation scheme). *Business: rice mill, retails shops, motorbike repair shop, hair dress shop, ice making, noodle making and furniture shop.*
	Candle	When electricity cut off
	Charcoal some firewood	Cooking and foods processing
Champasak Province Sanakhouman District	Electricity grid	Housing: Lighting, TV set, refrigerator, iron, fans, rice cooker, frying pan, pumping water for using and agriculture products (irrigation scheme). *Business: rice mill, retails shops, ice making, motorbike repair shop, hair salon, and furniture shop and electric clay mixers.*
	Candle	During power cut
	Firewood, charcoal	Cooking and food processing
Savannakhet Province Xaibuli District	Electricity grid	Lighting, TV, refrigerator, iron, fans, rice cooker, frying pan, pumping water for agriculture products (irrigation scheme). *Business: rice mill, retails shops, ice making, motorbike repair shop, and furniture shop.*
	Candles	During power cut
	Firewood, charcoal	Cooking and baking tobacco leafs

II) Off-grid Communities

Three off-grid villages were involved in this study: two villages in the North and one village in the South. Both Northern villages visited had a number of pico hydro turbines installed for lighting purpose and all households were connected to them. Some families had bought higher capacity machines which supplied enough for TV, stereo and for mobile phone charging. The capacity was however too low for using many electrical appliances at the same time. The pico hydro turbines were only functioning well if the water level was not too high and not flowing too fast but on the other hand also not too low. Thus, these machines could not be used during the rainy season. A man in Houay Aouang village said:

> *"I have enough electricity for lighting from pico hydro turbine only during 3-4 months a year because the water level in the river here is very low in the dry season and in the rainy season it is too high since the river is very narrow and the stream becomes very fast. I still have enough capacity from the one in the rice paddy. That one can supply enough for TV and stereo. I can use it more than 8 months per year."*

In addition to the water levels and high flow, another problems related to pico hydro was that the equipment often breaks easily, some cheaper models even after one week. A better one could last for about three years. The guarantee for a broken machine was only one week. Most people had a medium size pico hydro which would cost 400 000–500 000 kip whereas a higher capacity pico hydro equipment would cost 800 000 kip.

Picture 3. Electricity cables from pico hydro in an off-grid village in Phongsaly.

Savannakhet off-grid village was using kerosene and battery for household lighting. In 3 households also biogas was used for both lighting and cooking. However, the families told about the problems they had faced with the biogas system:

> *"My house uses the biogas stove for lighting and cooking, but the bio gas light bulb breaks easily. The bulb was provided by a project and it lasted only for 3 days and then it was broken, I don't know why? We have to have 50 % own contribution for the bio gas system, equaling 2 500 000 Kip. Many people don't like the bio gas energy because they don't have the animal waste needed to use it. The bio gas energy can only produce energy for cooking and lighting but not for watching TV."*

Despite the problems the villagers who had the bio gas system were willing to continue using it for cooking purposes.

Picture 4. A man in Vangkaen village, Savannakhet using a bio gas stove for cooking.

Picture 5. *A light bulb in Vangkahen village running with energy from bio gas.*

Picture 6. *Fire wood stocks in an off-grid village in Phongsaly.*

All respondents complained that their living conditions were very hard without electricity. Some families still used traditional rice mills (by hand) and carried water from a dug well. Most villagers take their rice to the rice mill in the neighbouring village where there was a mill run with electricity.

None of the off-grid villages faced difficulties in collecting firewood but the villagers said that they had to go bit further than they did 3 years ago in order to find enough fire wood. These days most villagers have a hand tractor which allows them to complete the task faster. Each household started to collect firewood after completing the rice harvest between December-February. They collected enough for the whole following year. Vangkhane village in Savannakhet still had big trees in the rice paddy and nearly every household made charcoal for sale and for home use. Women in Ngaynoua village, Phongsali province said:

> *"We need to collect a lot of firewood every year. This year we are using five hand tractors because the weather is colder and we worry there will be heavy rain, too. We are not allowed to cut the forest. We can only collect dead tree branches from our own garden. Two years ago we planted more trees in our field and within the next three years we will be able to use them to collect firewood."*

When the people living in off-grid villages were asked about which electrical items they would buy first after being connected to the grid, most respondents answered refrigerator and a fan. Many of them already had a TV and a CD player/stereo and some of them also a fan. However, the TV and stereo were only used in special occasions, such as festivals, as the equipment required battery charging.

In the off-grid village in the South charging mobile phone batteries was problematic. In the Northern villages people could charge their phones with electricity from pico hydro without any problems, but in the South the villagers would have to go to the next village to charge the battery and pay 1000 kip.

Picture 7. An oven for charcoal production in Vangkahen village, Savannakhet.

Table 5. Summary table of energy source in off-grid villages.

Name of off-grid community	Sources of energy	Energy used for
Huaphan Province HouayAouang village, Xamnoua District	Pico hydro turbine, candles, torches	Lighting, mobile phone charging
	Firewood, charcoal	Cooking
Phongsaly Province Ngaynoua village, Bounnoua district	Pico hydro turbine, candles, torches	Lighting, TV, stereo, mobile phone charging
	Firewood, charcoal	Cooking
	Hand tractor engine	Rice mill
Savannakhet Province Vangkhane village, OuToumphone district.	Kerosene, candles and battery	Lighting, battery also used when catching frogs and fish
	Firewood, charcoal	Cooking and sticky rice noodle and alcohol production
	Bio gas	Cooking, lighting

3.2 Livelihoods and Food Security

In Northern provinces where most villages were located in mountainous areas, people said that they had limited amount of agricultural land and water sources. There were more livelihood activities during the wet season than during the dry season, such as low and upland rice cultivation, industrial plantations, feed corn, livestock, fishing, weaving, and handicraft, as well as collecting bamboo shoot. In Southern provinces people were busy growing both wet and dry season crops throughout the year as all on-grid villages visited in the south had electric irrigation pumps and more agricultural land than the villages in the North. The villagers told that rice yields were increasing compared to the past few years due to improved rice varieties, increased use of fertilizers, chemicals for weeding and use of pesticides.

Picture 8. Irrigation pump at the Xedon River in Shouvanakhiri, Champasak Province.

The most common dry season activities among Northern people were collecting NTFPs such as grass broom, cardamom, bamboo shoot and rattan shoot. In addition, many men migrated to work in the city as construction workers and to cut weed at rubber plantations. All northern villages visited mentioned that most of the women worked in the village during the dry season collecting firewood, weaving and collecting NTFPs.

Migration to cities and neighbouring Thailand was also common and important for the economy of many families (see chapter 5.4.1. Migration). A 63-year-old lady in Champasak Province told that her main income was remittances from her children who worked in Thailand:

> *"I have about 2 ha of irrigated rice paddy field and I can use it for two season crops but I do not have enough labour. I have seven children and four of them lives in Thailand and other three are married. Two of them have got their own paddy fields and another one is running a small business. I rented my paddy field to other families during the dry season and I hired laborers to do the wet season rice because it does not demand as high work input as dry season rice does"*

Some people received remittances also from USA and France. It was widely common that additional income was made from NTFPs, farming and making various products. Many things could be sold and turned into money and people were not dependent on the rice harvest alone. Prices had gone up which was good for selling any products, especially if there is enough for own use, too. The forest products were in great demand but they were increasingly more difficult to find; yet, it was still profitable. Both in North and South many households had also fish ponds.

I) On-grid Communities

When comparing the off-grid and on-grid villages, it was clear that the on-grid villages had more livelihood activities and that the economic status had grown more rapidly over the past five years. The main reason for their economic development was the application of electricity into small businesses, agriculture and household activities. In the on-grid villages the main occupations of people were often government workers with tea gardens, they had more cattle and they manufactured products, and were more often merchants than farmers. Some also worked on constructions, as in the electrified villages there is more development and need for construction. There was a lack of labour for rice farms and vegetable gardens were favoured over rice farming as they required less irrigation.

II) Off-grid Communities

The livelihoods in the off-grid villages consisted mainly of farming and often also collecting NTFPs such as grass broom, cardamom, bamboo shoot and rattan shoot. Since farming requires good land and a water source, collecting NTFPs was an important addition to many people's livelihood. Although some improvements have been made, including the construction of better road access, it does not always improve the situation of the farmers. Many young people from the villages close to the Thai border chose to migrate to Thailand, where the working and living conditions were better.

3.3 Changes in Livelihood Conditions and Food Security

Most respondents told that many things had changed over the past three years, particularly the living conditions. The biggest changes in the livelihoods were increased living costs including rice and food price and children's school fees. Some people doubted that the reason for increasing living costs was the population growth leading to increasing demand. In general they were happy with the increased prices because *"It is motivating people in the rural areas to work harder and produce more to supply the demand which makes them earn more cash",* as one villager said. Rice price increased from 1500 kip/kg in 2009 to 3000 kip/kg[1] in 2010. Farmers in both South and North said that the increase in the rice price had increased their income too. This was particularly the case for rice farmers in Southern provinces who had more rice paddies. A village headman in Souvannakhiri told about the effects of increased rice prices which had made the farmers to invest their cash into expansion of the secondary canals needed for dry season rice:

> *"As rice price is good this year for dry season crops we have been able to plant about 50 ha more irrigated land. In 2009 we had about 83 ha of irrigated paddy, this year the total planted paddy area is 135 ha. We did not receive funds to extend the secondary canals but made it with our own money. This dry season the families that have large paddy fields have to share at least 0,5 ha paddy fields with families who have no irrigated paddy and lend some to families that have < 1 ha irrigated land. This year two families returned from Thailand to grow rice for sale because they have their own paddy field here."*

Because of the increased rice price the labour costs had increased, too. In addition, in some villages in the South there was not enough labour. This had caused problems to some rice farmers during the harvest season. Many farmers would also wait until the end of the wet season before they would sell their rice because that is when the rice price is the highest.

Some respondents in the Northern provinces found that the increased rice price had had a negative impact on household economy, mainly the poor people who had small paddy fields and large families. Wet season crop had produced lower yields than dry season crops and there was a high risk of damage by natural events such as drought and floods. These people had to buy rice from market when they had finished their own rice. Poor farmers in Meuangleud village, Huaphan Province said:

> *"This year half of my paddy field got damaged by drought. This month we have about 400 kg of husked rice left and I think within the next 3 months my family won't have rice to eat for about another 3 months until next year's harvest. My income earned from weaving will be spent for rice purchasing only"*

[1] Husk rice

The negative impact of increased rice price has had a big effect also on Phongsali tea plantation famers as the price of tea leaves had dropped over the past five years from 20 000 kip/kg for fresh tea leaves down to 2000 kip/kg in 2010. The retail shop owners in Homsavang village, Phongsali Province said:

> *"When tea price was high in 2004-2007 I could sell 5-10 million kip of goods at my shop every day. People were very happy and interested in growing tea and the provincial government had encouraged all villagers in Phongsali District to stop with slash and burn rice cultivation and grow tea instead. I feel very sorry for these farmers that they became poorer than before. Some days I saw villagers carrying big sacks of cooked tea leaf to exchange with rice but no one wanted them."*

A Tea farmer in Homsavang village, Phongsali said:

> *"I do not know how we can survive with such a high rice price. Recently the price for fresh tea leaves has been only 2000 kip/kg but rice price is 8000 kip/kg. If the government does not have a solution to bring tea price up to at least half of the price of rice, my family might have to move to live in Loungnamtha province to look for work at rubber plantation at a Chinese Company like many other families here have done during the past three years."*

There were also traders from neighbouring countries that often would have lower prices than the local products and especially the Chinese markets were competitive as the prices were very low in comparison to local products.

Among the positive changes were technology that had reached many of the villages. Electrical appliances are used with the help of pico hydro power in the off-grid villages. Electricity grid was being planned in many villages, and roads and boreholes were being built. Also in the on-grid villages the living conditions have improved and there is less poverty and more traders and tourists. The arrival of new work opportunities brings also variance to livelihoods, as food and other products can be sold to the people who work at factories, dams and plantations. The improvements in transportation such as improved road connections brings more tourists, which again brings more value to growing, collecting and manufacturing products.

3.3.1 Access to Land

All respondents told that there was very little land available for expansion of agricultural land. After the government implemented the policy on Land Use Planning every village has got their boundary determined and it has been allocated to individual users. Most of the Northern villagers owned at least 2 ha of agricultural land and some families who had received land from their parents owned about 5–10 ha. In Southern provinces farmers were facing agricultural and residential land shortage. All the land had to be efficiently used as there was no more available public land, except for conservation.

Effects of industrial plantation were reported throughout the country. The respondents complained that they had to go further to collect firewood and that there was no more good wood available as a lot of

forests has been converted to industrial plantations and are owned by foreigners who have prohibited the access to the plantation forests. Vangkhane village women said:

> *"It is getting harder to find good and dry firewood because our forest has been replaced by eucalyptus plantations and government does not allow us to do slash and burn cultivation. Now we can only collect broken branches of trees in our own rice fields and produce charcoal to be used in the rainy season."*

Industrial plantations were also believed to effect water levels and fish (see section 3.5.1. for more). Land concessions are taking place both in Northern and Southern provinces and are one of the factors causing land shortage among villagers. In this study 3 of the 10 rural villages visited had land taken by plantation project developers. The compensations have been low. For example in Ngaynoua in Phongsali Province Chinese farmers received 15 years land concession to grow banana and cash crops. In Pakvaed village Luangprabang province 15 ha of land had been reserved for Northern region electricity distribution station and in Vangkhane village in Savannakhet province 32 ha for the Eucalyptus plantation of an Indian company. A person in Savannakhet Province said:

> *"The Indian Eucalyptus Company took 32 ha from individual land owners three years ago. That land does not have titles yet. They only had land use tax payment receipts and therefore the village could not get compensation."*

In addition to land concessions land supporting people's livelihoods is getting lost due to conversion of agricultural land to residential areas. Respondent in Dornkhor village, Champasak said:

> *"Population growth has been very fast over the past three years and we do not have much empty residential land left. Therefore, some families have used irrigated land to build houses on. In total we lost 17 ha of irrigated land for house construction."*

3.3.2 Access to Forest Products and NTFPs

People in Northern provinces had better access to forest and NTFPs than people in Southern provinces. In the North the daily income comes from selling forest products and NTFPs. Over the last three years there have been more traders buying grass to make brooms and bamboo shoots. After the harvest of wet season rice all women and children were busy collecting grass to make brooms. The harvest season of grass lasts from January to April and the different varieties of bamboo shoots are available throughout the year. In 2011 both bamboo shoot and grass broom price had increased; dry broom grass cost 2000 kip/kg in Huaphan province and 2500 kip/kg in Phongsali province and bamboo shoots between 500–2000 kip/kg. In 2009 the maximum price for broom grass was 1000- 1500 kip/kg. Grass brooms are mainly exported from Huaphan and Xiengkhouang to Vietnam and from Phongsali to China.

All respondents had noticed that they had to go further to collect these forest products compared to three years ago. It took the villagers a day to get 2 kg of grass to make brooms. On the other hand, they did not complain because they could sell them with a good price. Houay Aouang village woman:

> "*Every day after harvesting rice we go to collect broom grass. My children can also earn some money now. This year the price is very good and every village is collecting it but it is not difficult to find it yet because it re-grows every year by itself. When I need to buy salt, toothpaste and even rice, I go to forest to collect broom grass, dry it for one day and then the next day I have money to go to the market*"

In Southern provinces especially in the wet season people could not collect much NTFPs as low laying areas were often covered by water. In general there is only little forest available for collecting fire wood and NTFPs in Southern provinces.

Picture 9. Grass brooms in Houay Eouang village in Huaphan Province.

Picture 10. A woman in Houay Eouang village in Huaphan Province making a grass roof.

3.4 Coping Strategies

The middle income and poor households complained that the living costs had increased. Respondents in Meuangleuad, Huaphan Province said:

> *"The increased living costs have caused big problems especially for poor families but also for the middle income group. The most well off family's income in the village is more than their living costs because they have rice paddies and capital for investments, but the households who are living hand to mouth have to scratch for survival".*

When asked about their experiences about rice shortage and economic shocks all respondents in the North replied that they would borrow from their relatives. If they could not borrow from them, then they would borrow from the neighbours. The last option was to sell cattle. About 50% of villages visited had village funds which allowed them to borrow if they had economic shocks. However, this loan was not open to non-members and most of the poorest people are non-members. A woman in Meoungleuad said:

"In this village there are 22 households identified as poor because we do not have enough rice for about 2-3 months a year. This year it was very hard for my family to make living. It is quite easy to make money because there are more buyers but on the other hand we also have to buy other things and prices are increasing."

3.4.1 Migration

In Southern provinces people said that most young boys and girls preferred to look for work in Thailand, Vientiane capital and other bigger cities rather than working in the rice paddies. In Champasak and Savannakhet provinces people said that the main reason for young labourers to migrate to Thailand was because life in Laos was expensive and wages were very low. All respondents of Hadxaysoung village in Savannakhet province had 1–2 family members working in Thailand. They told that each year about 15–20 people would migrate to Thailand. However, they added, that after the opening of a sugarcane factory less people had migrated to Thailand as people could work in sugarcane field or in the factory. A respondent in Vangkhane village in Savannakhet province said that people started to migrate to Thailand for work around 1996–1997. Some respondents had stayed in Thailand for 3 years, some longer, but had then returned back home. A 24-year-old woman said:

"I just returned home last year. I have been working in Thailand for about 6-7 years. I returned because I got married and there is no one looking after my parents. My younger sister and younger brother are still working there. They visit us and bring money once a year to support our family."

The villagers in the South told that some people decided to stay in Thailand if they had married or had a good job. They would still send money to their family in Laos. Many people from South had also migrated to Vientiane capital to work in garment factories, but as the wages were low and the work was very hard, many of them had also decided to quit their job at the factory and move back home.

In the North it was not as common to migrate to Thailand. People preferred to migrate to other provinces rather than distant Thailand. Phongsali province borders to China and Vietnam but due to language barriers they preferred to work in the neighboring provinces Oudomxai, Louangnamtha, Luangprabang and Vientiane. Respondents from Homsavang village, Phongsali province said:

"After the price of tea leaves fell sharply, but the price of food and rice increased slightly every day, many families moved to live in Louangnamtha and Oudomxai province and some young women went to work in garment factories in Vientiane Capital. Last year my neighbor moved to Oudomxai province and built a very big hotel there."

3.5 Environmental Changes

3.5.1. Water Resources

Water shortage is a real issue in the villages, especially irrigation water. Pumps are used for irrigation but it is challenging without power grid. The two villages visited in Huaphan province were facing drinking water shortage. Lack of water as well as erosion is feared to become even greater problems in the future. In some areas, the water supply has high iron and calcium carbonate content which easily damages hand pumps. Villagers living along the river affected by Namtheun 2 hydro project in Savannakhet province said:

> *"We cannot get clean water anymore. We used to have three springs in the dry season next to Xebangfai River, now it is all covered by muddy water. The dam company provided 15 boreholes for us last year but now only three of them can be used. The other 12 cannot be used because some of them had no water and some are contaminated with iron. About 7 boreholes have this problem. It is not only smelly but it tastes very salty and the water is not clear. The company said they will drill a new borehole and put a filter."*

The building of dams is believed to affect the river water levels and the amount of fish in the river and many people said that fishing has become nearly futile. Farmers in Pakvaed village in Luangprabang said:

> *"I think the reason Namkhan River is very low this year is because of a dam construction along Namkhan that blocks the water from flowing down. There is not enough water to drain into rice paddy. Also some fish species could not be found in this area. The villagers who are collecting river weed are complaining, too".*

In addition, respondents in Hadxaysoung village living downstream of Xebangfai River which was impacted by Namtheun 2 hydro power project noticed a number of fish species disappearing, water level flowing faster as well as higher water in dry season. These changes have forced the fishermen to change occupation. Xebangfai river fishermen reported:

> *"Indeed, we cannot do fishing as we usually did for many years. None of our fishing nets are suited to this fast flowing water and water in dry season is nearly 1,5 meters higher than before. Most fishermen had to stop catching fish and now we work in the rice fields only and consume tilapia and tuna imported from Thailand*".

Pakvaed village in XiengNgeun district, Luangprabang Province reported that about 50% of farmers stopped growing rice this dry season as there was very little water in the reservoir. Also respondents in Luangprabang, along Namkhan River reported some impacts caused by hydro power dam construction.

Large plantations, such as tobacco, sugarcane, rubber and eucalyptus, have replaced forest throughout the country. The plantations demand large quantities of irrigation water. Villagers believed that rubber plantation and forest degradation had also affected the fish stands in streams and canals.

In Savannakhet province a sugarcane plantation and an adjacent factory had had an impact on the quality of river water. The factory had polluted the river water and it could not be used for washing and irrigation. In addition, people believed that small fish, crabs and snails had reduced due to pollution from the factory. No compensation had been provided.

3.5.2 Climate

All the respondents said that the weather in the winter period was colder and longer than last year and the hot season was also longer and very hot. The change in the weather patterns had affected their agricultural products, health and living condition, especially the cold weather. Rice farmers said that if the weather was too cold rice would not grow well. It would become yellow and they could not fertilize it. On the contrary, tea plantation farmers in Phongsali were affected more by the hot weather in 2010 because tea plants cannot produce new leaves if there is not enough fog. 50% of the low land rice fields in Northern provinces were damaged by drought in 2010. A respondent in Meuangleud village in Huaphan province said that in addition to affecting rice and maize yields, the warmer weather had also caused droughts affecting fishing ponds. The ponds had dried out and killed the fish.

Both Northern and Southern people told that almost all of their children younger than 10 years had colds and coughs during winter time. They also had to light fire all day and night to stay warm, which also demands a lot of firewood. A Khmu woman in Houay Aouang village, Huaphan Province said:

> *"This year is the coldest year in the past 5 years. I have to collect more firewood and it is a very difficult work. Some days we did not go out because it was too cold. I do not want to stay away from fire. My little children all had a cold and coughing."*

3.5.3 Land Quality

Most respondents had noticed that the quality of their agricultural land had decreased. About 50% of farmers in Southern provinces used chemical fertilizer on the rice crop in the wet season and 100% of irrigated rice paddies were fertilized with at least 300 kg/ha of chemical fertilizer. However, farmers in Northern provinces used almost no chemical fertilizer for wet season crop. Some farmers had started using organic fertilizers after having used chemical fertilizer for many years. The farmers in Pakvaed village, XiengNgeun district in Luangprabang province said they had been trained to produce organic fertilizer by FAO and World Heritage Project 3 years ago and recently 40 vegetable farmers are piloting an organic vegetable project. Rice farmers in Pakvaed village, Luangprabang province said:

> *"About 50% of rice and vegetable farmers stopped using chemical fertilizers. We now use cattle manure; we make our own organic fertilizer from leftover vegetables and animals. It is not as difficult as we thought and it costs nothing but it provides very good results. We also use herbs for killing insects in the rice fields."*

All respondents were using herbicides for killing weed and all said it is quicker and cheaper than hiring labour to do the weeding. The respondents had also experienced an increasing number of insects and pests in the paddy fields. Last year both in the Northern and Southern provinces rice worms were found although they did not cause too much damage to the rice. The stink bugs and rice fungus are often found in the wet season crops but most of the farmers do not use insecticides as the insects are not very harmful to rice. A farmer in Champasak province said:

> *"It is too difficult to do the weeding by hand as we usually did 5 years ago. By using this pesticide I have time to do other work and it costs about 100 000 kip per ha, whereas if I hire people to do it, it would cost about 400 000 kip/ha and it takes at least 1 week."*

Rice paddies are also a source of protein providing fish, eels, crabs and insects. Thus, the use of chemicals in the paddies can also have a negative effect on the food supply. Farmers in both Champasak and Savannakhet told about the environmental problems related to the use of pesticides. They had noticed that the chemicals killed not only weeds but also crabs and fish they used to catch from the rice fields.

No authority supervises the use of chemicals on crops, so people can do what they want. Insecticides are not widely used as some insects like stinkbugs can be collected and sold, but herbicide is more popular. Based on the effects they have witnessed, a number of people are still cautious about the use of chemicals, and some still remove insects in a traditional way:

> *"I use a plate with five pairs of flower, five pairs of candle and make a wish to request the pest to go away from my rice".*

3.6. Visions on Economic Development over the Next 3–5 Years

Responses to the questions about the future development of their village's economic development showed that male respondents both in Northern and Southern provinces were more optimistic than female respondents. The men thought that their village would have some changes such as more small businesses and bigger markets in the district town, as well as more traders visiting the village. A forest product buyer in Hadkhor village, Luangprabang province said:

> *"I am sure that over the next 5 years our village will have more retail shops along the main road and there will also be some restaurants and guesthouses, because our village is not far from tobacco factory and dry fruits chip factory which is now under construction. If it opens within the next two years as government officers told us, our villagers will earn a better income and we will produce more things to sell to factory workers."*

The female respondents were not sure what would change over next 5 years. They were mainly concerned that it might be harder to earn income and manage the high living costs which are continually increasing. A woman in Pakvaed village, Luangprabang province said:

> *"I am worried about the fact that the living costs are increasing every day. I do not think we can make much profit from our agricultural products. I have 2 children who will complete high school within the next 3 years and I might not be able to afford to send them to university. Our village will be developed for sure because we are located along the main road and not far from provincial capital. I'm sure in the future the number of tourists coming to Luangprabang province will increase, too, and they will eventually come to our village as well.*

The men in off-grid villages believed that they would have access to electricity grid within the next 3 years. They had already prepared some money to pay for installation costs of electricity cable into their house. Some people said they have been told by officers at the Department of Energy and Mines that government will connect all villages to the grid over the next 5 years. In Phongsali the electricity would be bought from China. The headman of Ngaynoua said:

> *"The governor of Phongsali gave a speech in a district meeting and said that my village will be connected to electricity grid by the end of 2011. Other villages along the main road will also be included because Phongsali government already found a company willing to invest in purchasing electricity from China for NyodOu district and for the province."*

4. URBAN COMMUNITY

4.1. Household Energy Management

Most respondents in Vientiane Capital have experience from energy management when living with their parents. In their home villages, before moving to Vientiane Capital, they helped their parents to collect firewood, make charcoal and used it for cooking. People who had migrated from Northern provinces and had lived in remote off-grid districts, had no experiences from electricity before moving to the city.

The respondents living with relatives or at their workplace had usually no responsibility of energy management but they had limitations on the use of certain electric appliances. A teenage boy from Luangprabang said:

> *"As I stay at my auntie's place I cannot turn TV on for longer than 1 hour and I do not have my private stereo set as I had at my parent's place. I have never been told to not use it but I do not dare to do it because I pay nothing there. My auntie's house has all necessary electric appliances such as washing machine, electric cooking pot, water boiler, two air conditioners and two TVs with stereo set. The monthly electricity bill is about 300 000 kip."*

Charcoal and electric cooking pan and pot are the most common energy sources for cooking in urban community. A girl sharing an apartment with other girls told:

> *"In my apartment three people are living together. We usually pay 30 000 kip/month for electricity, and water is 10 000 kip/month, fixed price. We cook twice a day; breakfast and dinner, but we do not often use charcoal or firewood because it takes too long. We use electric cooking pan for both boiling and steaming sticky rice and we use charcoal only when we want to grill something."*

Table 8. Summary of energy use involved.

How/where they lived	**Sources of energy**		**Monthly Expenses (kip/month)**	**Person responsible for energy costs**
	Sources	**Purposes**		
Cousin's house	- Electricity - Charcoal - Gas stove	Lighting & entertainment, cooking	200 000- 350 000	Cousin
Renting room/apartment	- Electricity - Charcoal	Lighting & entertainment, cooking	20 000- 80 000	Tenants
Dormitory	- Electricity	Lighting & simple cooking with electric pot	none (included in the rent)	Factory
Workplace	- Electricity - Charcoal - Gas stove	Lighting, TV, stereo and business, cooking	200 000- 500 000	Business owner

4.2. Livelihoods and Food Security

Most female respondents' reason for migrating to the capital was their family's economic pressure and the fact that there were no jobs available for them in their home villages – apart from working in the rice field with their family. There was only one married respondent who had moved with her child as the husband had found a better job in Vientiane. One single woman moved because her mother remarried a man in Vientiane and 12 other single female respondents moved to earn some cash to support their family. Some different reasons were found in the male groups. Eight respondents wanted to look for a better job to support their family, three persons were interested to live in the capital to try out the city life, two persons have been involved in drugs and moved to live with cousins in Vientiane in order to stay away from old friends and trouble, and another two respondents were interested to get a higher education. A 18-year-old boy from Luangprabang said:

> *"The reason I moved to Vientiane capital was because my parents wanted me to live with my cousin so I couldn't hang out with friends as I did when I was living with my parents. On the other hand, I also wanted to get away from friends and drugs and was interested about city life. My cousin is very strict and does not allow me to go anywhere by myself and I have to work at their furniture factory. I did not get my salary until now because my auntie helps me to make savings."*

All respondents came to Vientiane with somebody and had some connection in the city before they arrived – mainly friends or cousins who already lived in Vientiane. Some people were more some less prepared when moving to Vientiane. Female respondents were more careful and better prepared than males. Before they decided to move to the city they had contacted friends or cousins to help them to find a job for them. All female respondents said they could get a job easier than men because they were less picky. They did not want to waste time by waiting for 'the dream job'. Therefore, most migrant women had their first job at a garment factory during the first 6- 12 months in the city and then changed to a better job after making some connections. Hairdresser, waitress and cleaner were often the second type of jobs available for women with low level of education. There were four teenage girls who had completed upper secondary and who could get a better job such as staff at mini market, receptionist at restaurant and masseuses. Jobs available for males with low level of education were construction worker, guard and garment worker. Some males who migrated from cities and towns close to Vientiane capital, such as Luangprabang, Vientiane province, Bolikhamxai and Savannakhet, had better jobs such as motorbike/car repair shop, furniture shop and waiter because they already had some technical skills or some cousins who worked there or owned a business. A glazier from Thulakhom district, Vientiane province said:

> *"After I graduated from forestry college I went home, looked for a job there for one year but the job I got there was working as a guard at a rubber plantation for a big private company. I got a monthly salary of 500 000 kip. I asked myself if I could continue working here and realized I won't learn anything and this income won't*

satisfy me. I used to work at my cousin's glass fixing shop while I studied so I had some skills. I quit my guard job and then headed to the city again and now I can earn about 1 million or even 1,5 million kip/month some months depending on the work I could get. I also have free accommodation and food."

Only one male respondent decided to return home by the end of the year after working in the city for four years. He left his family with two children in the village and he resigned from military service before he came. The other 27 respondents did not want to return to their home villages. About half of the respondents were planning to bring a sister or a brother and/or their parents to live together in Vientiane. Most single male and women were hoping to get married and then buy a piece of land and build their own house in the city. Similarly, three married men and three married women had arrived to Vientiane while single and then got married with a migrant woman or man from other province and decided to live in city rather than going back to their home village. A married woman from Luangprabang town said:

"I left my home after my mother died. Then my father married a woman with four children. My two sisters and brothers and I decided to leave him. My two brothers became novices at a temple in Luangprabang and I left my two sisters with cousins in Luangprabang for the first year. After that I brought them to study in Vientiane and live with me. I am staying at my cousin's house with my husband and my 8-months-old daughter and two sisters. I am lucky that I met my husband and he married me. Otherwise I might not have been able to bring my sisters here. I want to take my two brothers here, but cannot now because our income is not enough to support all of them."

Table 7. Summary table of respondent's occupations and income.

Education level		**Occupation**		**Salary (kip)**	
Male	**Female**	**Male**	**Female**	**Male**	**Female**
2 completed primary school	1 completed primary school	Construction worker	Garment worker	40 000kip/day	650 000kip/ month
4 completed Lower secondary school	5 completed Lower secondary school	Glaziers, motorbike repair, garment worker	Hairdressers, garment workers, cleaner	700 000kip/ month	650 000kip/ month
7 completed upper secondary school	5 completed upper secondary school	DJ & waiter, Carpenter, construction contractor	Hairdressers, garment workers, cleaner, weaver	800 000kip/ month	650 000kip/ month
2 completed college	2 completed college	Glaziers, car repair	Masseuse, line manager	1 200 000kip/ month	800 000kip/ month

4.3 Changes in Livelihood Conditions

When discussing the biggest changes in their lives and how they dealt with increasing living costs in the big city, most of them replied that it was a very hard life in comparison to the life in their home village with their parents. A single woman from Huaphan province, living at dormitory district said:

> *"I miss my home very much. I think of local food cooked by my mother. I cannot go home as long as my family is still poor. Every day here I get 3000 kip. The factory paid for my food allowance, I can only afford prepared food sold in the front of the factory. I often asked my parent to send some local food to me such as bamboo shoots, wild animal meat and rice from our own paddy."*

However, despite some struggle, all respondents were satisfied with their lives in Vientiane and said that this situation was still better than living in their home villages as it gave them experience of managing their own income and learn how to deal with financial problems. Most of them said urban living helped them to become stronger persons and develop strong personalities. A married woman originally from Viengxai district, Huaphan province said:

> *"My life has changed a lot during the past 5 years; I got married here, I now have my own family with a 2-year-old son, I got a promotion from labour worker at a garment factory to assistant line manager and we are now planning to buy a small piece of land and build our own house. My parents' house has a tile roof and TV and hand tractor paid from my salary."*

The respondents had also realized that in the city they had to spend money and some respondents said that in the village money was not as important as in the city. In their home village they never bought fire-wood and never paid for water or bought rice. If they did not have rice at home in their village they could borrow from cousin easily. All of them said that the biggest concern with the life in the city were economic shocks – not having money when they got sick because they might not be able to borrow from anyone in an emergency case.

The respondents living with cousins or at workplace could save money and send more money home to their families than the respondents who were renting a room. A hair dresser from Phieng district, Xayabuli Province said:

> *"I am living at the shop where I work. I do not pay for anything. I felt it difficult to stay there at first as I have to do some of the housework, too. I was thinking of moving out to share a room with other friends. Then I found that the cost for living was too high - almost 100% of my income. Now I have to save about 50% of my salary and send home 20% and the remaining 30% I spend for my personal needs."*

The respondents who were renting one room apartment had more expenses. If they planned their economy carefully, they could also save some money. Single men often lived in a cheap room where water and electricity were included in the rent. It was just a room with a bathroom but without kitchen, no furnishings and no dining room and it cost about 200 000–250 000 kip/month. Most single female respondents were sharing a one room apartment with other friends and the rent cost was about 300 000– 400 000 kip per month with full responsibility for all fees, such as water and electricity, and with no furnishings. The reason for single women to rent the room with the kitchen and dining room was because they often cooked and they needed extra room for visitors.

4.4. Coping Strategies

All respondents had at some point run out of cash while living in the city and had in that case borrowed money from other people. Men seemed to have faced these problems more often than women. However, none of them had been unemployed for longer than two months because most of them would not quit their job until they had found a new job. The male respondents would borrow money when their motorbike was broken. The women would run out of cash for a few weeks only because they would put some of their money into their monthly share (a saving system). All respondents said they could take 20–50% advance salary at work with no interest charge, when needed. For a small amount of 50 000–100 000 kip they could easily borrow from colleagues or from a close friend. Some male respondents would ask parents to send some money when they were sick and needed more than they could get at work. Many of the participants told that if their parents would get sick and needed more than 1 million kip, they would use all their saving. If they had no savings they would borrow from a money lender even if the interest was high. However, none of the respondents had faced economic shocks that serious. A single man from Pakxan district said:

> *"I was sick three years ago and I did not have enough money to pay for medical treatment at the hospital. My parents sent me 2 million kip. I did not want to borrow from a money lender because they have too high interest rate. My parents borrowed from the village bank which charged only 2% per month."*

When discussing income management the female respondents seem to be better at managing their income. Single men found difficulties in saving and avoided social occasions because they often spent their income on drinks with friends during the weekend. Some single women told they sometimes spent too much on buying new clothes and cosmetics. However, all respondents said they could save at least 30% of their monthly income. Different forms of saving and salary payment systems were found among respondents. A majority saved money in the form of monthly sharing system.

Garment factory workers had their monthly salary transferred to their bank account with ATM card, construction worker received cash every two weeks. Some factory workers preferred to save with the help of an employer supported system with a fixed monthly amount deducted from their salary. This is a type of

social security programme that allows the member to make savings and borrow money with low interest (in Lao 'kong thoun ngeun fak pha yat'). Another similar but unofficial system based on trust was to make savings through a group of friends or relatives (in Lao 'ngeun houay or khao houay').

Even if many of the respondents sent money to their family in their home village, no one did it regularly or had a fixed amount and schedule for sending money home. Most of them would send money when their parents asked to, and also brought some cash with them when visiting home. On average they sent money twice a year, each time about 500 000 – 1 million kip. Everyone said that they often bought parents some electric appliances such as TV, a rice cooker, a mobile phone or a fan when they visited them.

4.5. Visions on Economic Development over the Next 3-5 Years

All respondents hoped to get better jobs or run their own business in the future. Most of the respondents working as a technician planned that within the next five years they would start their own business and make their living as a glazier, motorbike repairer or construction technician. Single female respondents were not able to say or make commitments about their future. Most of them said their careers might change if they got married and some said they might return home if they were still single after 3-5 years. However, all of them were hoping to be able to stay in Vientiane rather than returning home. A married glazier from Chomphet district, Luangprabang said:

> *"I have my family here. My wife is from Xiengkhouang province and we are both migrants. We can save very little money after all necessary expenses. Next year my son will be in school and we will have more expenses. I have to look for more jobs to earn enough money to buy a house or a piece of land in the big city. I am looking for a small piece in the suburbs. They cost 500 000 kip per square metre".*

5. DISCUSSIONS

Access to electricity grid is considered as a very important and positive change in the villages. Those already connected to the grid felt that the quality of life had improved, especially for women, as they could complete their daily tasks faster and work later due to lighting. The hygiene had also improved in on-grid villages as water could be pumped all the way to the houses and, in addition, refrigerators and washing machines could be used. There were also more livelihood options in on-grid villages visited. Electricity had allowed people to start small businesses, to have two crops per year due to electric pumps and to use telephones, which was useful for information sharing for example from a business perspective. Especially men emphasized the importance of telephone, but also radio and TV. Electricity grid had changed the livelihood options of the villagers and off-grid villagers were more dependent on agriculture with one crop a year, fishing, and NTFPs, and were more vulnerable to droughts affecting crops. In on-grid villages shops, businesses and guesthouses had opened soon after getting the connection to the grid. As the villages developed and there were more livelihood options, people were less interested to make their living from rice paddies. However, the ones who did could have both dry and wet season crops due to irrigation system. The development of the on-grid villages was also visible through improved housing and roads – new, modern houses and better roads for big cars were built. Good road access and electricity was also positive for tourism development. In off-grid villages people were eager to get connected to the grid and many were prepared and had some savings ready for the initial costs needed once the village would be connected. The main problems related to electricity were the steadily increasing prices, as well as power cuts. Due to the unreliability of electricity service many people were prepared with generators which were, however, expensive to use. Especially business owners found this to be an issue as the power cuts could damage the equipment.

Two types of small-scale renewable energy systems were found in the villages included in this study – pico hydro and biogas. Pico hydro in Northern provinces allowed the villagers to have lighting, charge mobile phones, watch TV and use stereo, and the biogas in the Southern off-grid village provided energy for cooking and lighting. While the users did find them useful, also a number of problems were related to both of them. The capacity of pico hydro is too small to allow the villagers to use many appliances at the same time. There were also big seasonal changes in the river water flow and, thus, the pico hydro placed in the river could not be used throughout the year. In some cases it could only be used during 3-4 months a year. In one case pico hydro turbine was placed in rice paddy canal where it could be used 8 months per year. In the case of biogas stove and biogas light bulb the problem was that there was no steady supply of animal waste. An additional problem was that the quality of both pico hydro and biogas light bulb was poor and they broke easily. The equipment is also very expensive and the initial costs relatively high, especially for the biogas equipment. Thus, while people found the both systems useful even with their limitations, they did not provide a reliable source of electricity which would have allowed people to develop businesses to the extent that on-grid villages had done.

Access to electricity had not stopped people from cooking with mainly fire wood and charcoal. The main reason seems to be the price of electricity. Fire wood and charcoal were still the main sources of energy used for cooking even in on-grid villages. Electric rice cooker was widely used for rice cooking but electric frying pan, which many people in on-grid villages did own, was not very popular to be used for cooking. Gas (liquid petroleum gas) was also rare and only in one village gas was used for cooking. A reason to the popularity of fire wood and charcoal in cooking could be that there is still a relatively steady supply of fire wood in Laos, in comparison to the neighbouring Cambodia where the deforestation has proceeded much further and the population is larger, too.

Wood saving cooking stoves have been introduced to many villages and people are well aware of them. However, the limiting factor in successful implementation seemed to be that the stoves heated up too slow and demanded too small pieces of charcoal or wood in comparison to traditional stoves. Only when the benefit, i.e. decreased fuel wood/charcoal demand, is big enough there is a will to change the traditional stove to an improved model, such as in the case of the clay stove used in a village in Champasak province where the improved stove demanded only half the amount of charcoal in comparison to traditional stove.

While collecting or buying fire wood was not too difficult, people did have to go further to collect them. The price of both fire wood and charcoal had also increased. Plantations owned by foreign companies had also affected the collection of both firewood and NTFPs – as plantations have replaced natural forests a source of fire wood and NTFPs has disappeared. Also access of local people to plantations has been prohibited. In general, the villagers had to go further to collect firewood and NTFPs than before. However, many had a hand tractor which allowed them to collect more fire wood at once. In Southern Laos the situation is seemingly worse as the population density is bigger and large areas are covered by agricultural land. Collecting firewood from trees surrounding rice paddies was common and for many people the only source of fire wood. Trees were planted for this purpose around the paddies.

In addition to increased fuel wood and charcoal prices, living costs in general have increased during the past years – the price of rice being one of the most significant ones as it has a central role in Lao diet. The rise of rice price has been a positive change to those having rice yields bigger than they would consume in their family. However, to most people this had caused problems as also children's school fees and other living costs had increased at the same time. In Phongsaly province tea farmers had faced big economic problems as the prices of tea leaves had fallen to the fraction of that it had been some years ago. Furthermore, the competition of foreign products and businesses, mainly Chinese, had affected from the sellers perspective negatively the prices of various products. The presence of Chines businesses seemed to be especially prominent in the North where there were many Chinese guesthouses, restaurants, shops and plantations.

In many families migration is common and an important source of income. While in many villages migration is still seasonal and young people return home for rice harvest season, in many cases people move more or less permanently. This is a problem to rice farmers who cannot afford hiring labour to do the hard and labour-intensive work at rice paddies. Many young people prefer to move to the city or neighbouring Thailand.

Environmental changes have affected the lives of people in many ways. Changed weather patterns, water and land quality issues were reported throughout the country. Longer and colder winter periods as well as warmer hot periods have both damaged crops. The quality of agricultural land was also decreasing and fertilizers were used. Chemical fertilizers and pesticides are widely used and they have also had an effect on the food chain as fish, crabs, eels and other sources of proteins have decreased or disappeared from rice paddies. Some successful cases of organic fertilizers were found in Northern Laos.

The on-going hydropower development in Laos has had an impact on the lives of people through affecting fishery, water quality and water levels. In some areas fishing had become nearly futile, forcing people to look for new livelihood strategies. As a result the nutrition has changed as imported fish from Thailand had replaced the fish previously caught from the river nearby. Decreased water levels have also affected agriculture especially in the dry season as water could not be led to rice paddies anymore. Furthermore, decreasing quality of drinking water has been noticed. In addition, also other industrial development has affected negatively the water quality without people being compensated for the harm. With the further expansion of both hydropower and industrial development it can be assumed that both environmental and social impacts will continue to increase in Laos.

The urbanization in Laos is increasing just as in most developing countries. Young people prefer to move to the city, some forced by family economy in home villages, some for curiosity to try out the city life. It is relatively easy for the migrants to find a job if they are not too picky. Most new migrants already had connections in the city through which they could organize housing and the first job. Usually people moved to the city with the purpose of staying permanently. They tried to make savings although life in the city was expensive in comparison to the life in villages. They hoped to get a better job or start their own business, get married and buy a piece of land and build a house in the city.

ANNEXES

Annex 1. Community and Group Respondent Selection Criteria

Name of Province	No. Communities & no. groups/community	Respondent Criteria	Total no. of Respondents
1) Vientiane Capital (Urban community)	4 groups: 2 male groups and 2 female groups.	- Migrated from rural Laos (=other provinces) - Living in VTE Capital at least 1 year and not longer than 5 years - Low income job: tuk-tuk driver, construction worker, waiter/ waitress, guard, gardener, maid, masseus, beer girls and etc. Exclude: high educated people, well off, private company staff, civil servants and international organization staff. - Each participant must be from a different village.	8 respondents/group
2) Huaphan Province (Rural Community)	2 Communities. 1 group per community (tot. 2 groups/ 2 Communities) Community #1: Access to electricity, distance from district capital not >50km and road accessible by car both dry & wet season. Comm. #2: No electricity. Distance not > 70km and road accessible by car in dry season.	Mixed group of 5 women and 3 men: - 1 deputy or director of village women union - 1 female head of household - 1 woman who owns retail shop or runs small business in the village - 2 women who are farmers - 3 married men; farmer and not part of village authority. - All respondents shall not be older than 50 years and have been living in this village for at least 3 years.	8 respondents/group
3) Phongsali Province (Rural Community)	No. of groups and criteria is the same as above	Respondent criteria are same as above.	8 respondents/group
4) Savannakhet Prov. (Rural Community)	No. of groups and criteria are the same as above	Respondent criteria are the same as above.	8 respondents/group
5) Luangpraangprabang Prov. (Rural Community)	No. of groups and criteria are the same as above Both communities have access to electricity and distance from district capital not >50km. Road accessible by car both dry & wet season.	Respondent criteria are the same as above.	8 respondents/group
6) Champasak Prov. (Rural Community)	No. of groups and criteria are the same as above Both communities have access to electricity and distance from district capital not >50km. Road accessible by car both dry & wet season.	Respondent criteria are same as above.	8 respondents/group

Annex 2. Rural community respondent profile

Community List/Name	Resp. No.	Sex (M/F)	Age	Ethnicity	Occupation	Years lived in the village	Eco-nomic status
1. MeungLeud	R1	M	28	LaoLoum	Farmer/Pot maker	From birth	Middle
	R2	M	38	LaoLoum	Farmer/Pot maker	From birth	Middle
Viengxai district, Huaphan province	R3	F	41	LaoLoum	Retail shop/Far	21 yrs	Middle
	R4	F	50	LaoLoum	Retail shop	6 yrs	Middle
	R5	F	27	LaoLoum	Farmer	11 yrs	Poor
On-grid	R6	F	44	LaoLoum	Farmer/LWU	From birth	Middle
	R7	F	30	LaoLoum	Farmer	From birth	Middle
	R8	M	30	LaoLoum	Farmer	From birth	Middle
2. HouayAoung	R1	F	43	Khmu	Farmer	From birth	Poor
	R2	F	40	Khmu	Farmer	28 yrs	Poor
Samnoua district, Huaphan province	R3	F	46	Khmu	Farmer	From birth	Middle
	R4	M	42	Khmu	Farmer	From birth	Middle
	R5	F	37	Khmu	Farmer	From birth	Middle
Off-grid	R6	F	50	Khmu	Trader/retail shop	From birth	Middle
	R7	M	50	Khmu	Farmer	From birth	Middle
	R8	M	42	Khmu	Farmer	From birth	Middle
3. Homsavang	R1	F	30	Lue	Village LWU, retail shop	From birth	Middle
Phongsali district, Phongsali province	R2	F	55	Lue	Tea plantation farmer. Head HH (widow)	From birth	Poor
On-grid	R3	F	37	Ho	Trader (guest-house owner)	10 yrs	well off
	R4	F	40	Phounoi	Tea plantation farmer	From birth	Poor
	R5	M	50	Ho	Tea plantation farmer.(Retired GOL)	From birth	Middle
	R6	M	40	Phounoi	Tea plantation farmer.(Retired GOL)	From birth	Middle
4. Nganoua	R1	M	50	Lue	Low land rice farmer	From birth	Middle
Bounnoua district, Phongsali province	R2	M	45	Lue	Low land rice farmer	From birth	Poor
	R3	M	50	Lue	Low land rice farmer	From birth	Middle
Off-grid	R4	F	45	Lue	Low land rice farmer	From birth	Middle
	R5	F	40	Lue	Low land rice farmer	From birth	Middle
	R6	F	30	Lue	Trader/retail shop	From birth	Middle
	R7	F	37	Lue	Rice farmer (Village LWU & Head's household)	From birth	Middle
	R8	F	38	Lue	Rice farmer	From birth	Poor
5. PakVaed	R1	F	54	Youan	Vegetable garden	From birth	Middle
	R2	M	55	Youan	Low land rice farmer	From birth	Middle
XiengNgeun district, Loungprabang province	R3	M	50	Youan	Rice farmer & food processing	From birth	Middle
On-grid	R4	M	40	LaoLoum	Low land rice farmer & vegetable garden	22 yrs	Middle
	R5	M	30	Youan	Low land rice farmer & vegetable garden	From birth	Middle
	R6	F	50	Youan	Low land rice	From birth	Middle

					farmer		
	R7	F	44	Youan	Trader/retail shop	From birth	well off
	R8	F	52	Youan	Banana garden (Head's HH)	From birth	Middle
	R9	F	49	Youan	Low land rice farmer (retired GOL)	26 yrs	Middle
6. Hadkhor **PakOu district, Loungprabang province** **On-grid**	R1	F	35	Lue	Tailor & weaver (Village LWU & Head's HH)	From birth	Middle
	R2	F	45	Lue	Low land rice+ Upland rice plantation	From birth	Poor
	R3	F	47	Lue	Low land rice+ Upland rice plantation	From birth	Middle
	R4	M	55	Lue	Vegetable garden + Low land rice farmer	From birth	Middle
	R5	M	55	Lue	Low land rice+ Upland rice plantation	From birth	Poor
	R6	M	37	Lue	Trader (forest product buyer & minibus owner)	From birth	well off
	R7	F	45	Lue	Vegetable garden+Tailor & low land rice farmer.(VLWU)	From birth	Middle
	R8	F	56	Lue	Retail shop owner + Weaver	From birth	Middle
	R9	F	40	Lue	Low land rice+ Upland rice plantation	From birth	Middle
7. Souvannakhiri **Sanasomboun district, Champasak province** **On-grid**	R1	F	33	LaoLoum	Rice farmer, vegetable garden and retail shop	From birth	Middle
	R2	F	40	LaoLoum	Rice farmer (2 season), a potter (clay cook stove) & Head's HH	From birth	Middle
	R3	F	40	LaoLoum	Rice farmer, a potter (clay stove) Village LWU	From birth	Middle
	R4	F	51	LaoLoum	Rice farmer (2 season)	From birth	Poor
	R5	M	41	LaoLoum	Rice farmer, a potter, barber	From birth	Middle
	R6	M	53	LaoLoum	Rice farmer (2 season)	From birth	Poor
	R7	M	60	LaoLoum	Rice farmer, retail shop and rice mill	From birth	well off
	R8	F	57	LaoLoum	Retail shop, rice farmer	From birth	Middle
8. Donekhor **Pakxe district, Champasak province** **On-grid**	R1	M	51	LaoLoum	Wet land rice farmer & fisher man	From birth	poor
	R2	M	53	LaoLoum	House construction, wet land rice farmer.	From birth	Middle
	R3	F	53	LaoLoum	Rice farmer (2 seasons) Head's household	From birth	Middle
	R4	M	48	LaoLoum	Rice farmer (2 seasons) fisher man	From birth	Poor
	R5	F	44	LaoLoum	Wet land rice	From birth	Middle

					farmer (LWU)		
	R6	F	50	LaoLoum	Wet land rice farmer, retail shop	From birth	Middle
	R7	F	40	LaoLoum	Rice farmer (2 seasons), weaver and Lao alcohol producer	From birth	well off
	R8	F	43	LaoLoum	Retail shop, wet land rice farmer	From birth	Middle
9.Hadxaysoung **Xaibuli district, Savannakhet province** **On-grid**	R1	F	57	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Middle
	R2	F	44	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden (VLWU)	From birth	Middle
	R3	F	41	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Middle
	R4	F	24	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Well off
	R5	F	29	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Well off
	R6	F	41	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Middle
	R7	M	60	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Middle
	R8	M	27	LaoLoum	Rice farmer (2 seasons crop) & vegetable garden	From birth	Middle
	R9	M	38	LaoLoum	Rice farmer (2 seasons crop) & retail shop, rice mill	From birth	Well off
	R10	F	46	LaoLoum	Rice farmer (2 season crop) & Teacher at kindergarten school	From birth	Middle
10. Vangkhane **Outoumphone district, Savannakhet province** **Off-grid**	R1	F	50	Phouthai	Wet land rice farmer (LWU)	From birth	Middle
	R2	F	60	Phouthai	Wet land rice farmer	From birth	Poor
	R3	F	48	Phouthai	Wet land rice farmer	From birth	Poor
	R4	F	53	Phouthai	Wet land rice farmer	From birth	Middle
	R5	F	38	Phouthai	Wet land rice farmer	From birth	Middle
	R6	M	37	Phouthai	Wet land rice farmer	From birth	Middle
	R7	M	32	Phouthai	Wet land rice farmer	12 years	Middle
	R8	M	33	Phouthai	Wet land rice farmer	From birth	Middle

Annex 3. Urban community respondent profile

Resp. No.	Age	Migrated from District/Province	No. of years in Vientiane Capital	Occupation	Family status/Living conditions	Income (Lao KIP)
MALE GROUPS						
R1	20	Samnoua Dist. Huaphan Prov.	4 years (March,2007)	Construction worker	Single/living with parent	Daily wage. 40,000kip/day
R2	26	Phonhong Dist. Vientiane Prov.	4 years (2007)	Construction worker	Married/living with parent in law house	Daily wage. 40,000kip/day
R3	29	Khong Dist. Champasak prov.	3 years (2008)	Construction worker	Single/living at uncle's house	Daily wage. 40,000kip/day
R4	20	Samnoua Dist. Huaphan Prov.	3 years (2008)	Carpenter at funiture factory	Single/living at auntie's house	monthly wage. 600,000kip/m
R5	20	Thulakhom Dist, Vientiane Prov.	2 years (2009)	Security staff at market	Single/living at dormitory	monthly wage. 500,000kip/m
R6	25	Tonpheung Dist, Bokeo Prov.	4 years (2007)	Waiter at beer garden	Single/renting a room	monthly wage. 600,000kip/m
R7	20	Loungprabang Dist. LPB Prov.	2 years (2009)	Carpenter at funiture factory	Single/living at auntie's house	Monthly salary. 600,000kip/m
R8	24	Thulakhom Dist, Vientiane Prov.	3 yrs (2008)	Motorbike repair shop	Single/renting a room	Monthly salary. 650,000kip/m
R1	28	Thulakhom Dist, Vientiane Prov.	3 yrs (2008)	Glazier (worker)	Single/living at workplace	Monthly salary. 1,000,000kip/m
R2	26	Chomphet Dist, LPB Prov.	3 yrs (2008)	Glazier (worker)	Married/renting a room	Monthly salary. 1,300,000kip/m
R3	24	Ngoy Dist, LPB Prov.	4 yrs (2007)	Construction worker (specialist on roof and ceiling)	Married/renting a room	Daily wage. 80,000kip/day
R4	18	Xepon Dist, Savannakhet Prov.	3 yrs (2008)	Garment Factory worker	Single/ living at factory dormitory	Monthly salary. 700,000kip/m
R5	23	Pakxan Dist, Bolikhanxai Prov.	5 yrs (2006)	Car repair shop	Single/renting a room	Monthly salary. 800,000kip/m
R6	35	Khua Dist, Phongsali Prov.	4 yrs (2007)	Construction worker (specialist on ceiling)	Married/ living with brother's family	Daily wage. 70,000kip/day
R7	25	Thulakhom Dist, Vientiane Prov.	3 yrs (end of 2008)	Construction worker and subcontractor	Single/renting a room with girl friend	Daily wage and sometime contract based wage
FEMALE GROUPS						
Resp. No.	**Age**	**Migrated from District/Province**	**Years in Vientiane Capital**	**Occupation**	**Family status/ Living conditions**	**Income (Lao KIP)**
R1	25	Ead Dist, Huaphan Prov.	5 yrs (2006)	Cleaner and waitress	Married/renting a room	Monthly salary. 500,000kip/m
R2	25	Pakxeng Dist, LPB Prov.	5 yrs (2006)	Garment worker	Single/Factory dormitory	Monthly salary. 800,000kip/m
R3	19	Ngoy Dist, LPB Prov.	3 yrs (2008)	Hairdresser	Single/parent's house	Monthly salary. 600,000kip/m
R4	22	Samtai Dist, Huaphan prov.	6 yrs (2005)	Garment worker	Single/Factory dormitory	Monthly salary. 800,000kip/m
R5	21	Vangvieng Dist, Vientiane Prov.	5 yrs (2006)	Hairdresser	Single/renting a room	Monthly salary. 700,000kip/m
R6	30	Phieng Dist, Xayabuli Prov.	3 yrs (2008)	Lao skirt weaver	Single/renting a room	per piece. Average 800,000kip/m
R7	26	Phieng Dist, Xayabuli Prov.	3 yrs (2008)	Hairdresser	Single/living at shop owner's house	Monthly salary. 500,000kip/m

R1	43	Kham Dist, Xieng-khouay Prov	5 yrs (2006)	Cleaner at petrol company	Married/renting a room	monthly salary/. 700,000kip/m
R2	22	Pakxe Dist, Cham-pasak Prov.	4 yrs (2007)	Staff at min-imarket	Single/renting a room	Monthly salary. 500,000kip/m
R3	26	Viengxay Dist, Huaphan Prov.	4 yrs (2007)	Garment worker	Married/renting a room	Monthly salary. 700,000kip/m
R4	22	Songkhone Dist, Savannakhet Prov.	3 yrs (2008)	Garment worker	Single/renting a room	Monthly salary. 700,000kip/m
R5	22	Ead Dist, Huaphan Prov.	4 yrs (2007)	Masseuse	Single/renting a room	Monthly salary. 800,000kip/m
R6	28	LPB Dist, LPB prov.	5 yrs (2006)	Garment factory (Line manager)	Married/rent a house	Monthly salary. 1,000,000kip/m

Annex 4. Focus group discussion (FGDs) topics: Rural areas

1. In the villages, facilitators explain why this discussion is organized:

The FGDs are part of a research about households' livelihood, food issues and energy use. This means, that we are interested in things like how people make their living and what changes have taken place in the villages/towns in the past few years. Is it easier or more difficult to make one´s living? The changes can be, for example, flooding or drought that has affected the rice crop; or increase in the food or fuel prices; or electrification of the village, building of a road etc. We will conduct all together 14 discussions such as this one, and interview 2000 heads of households in different provinces in Laos

[Note to the facilitators: The explanation of why discussion is organized has to be formulated in a simple language. Livelihood refers to how people make their living, which can include for example paid work, exchanging products and services, farming, fishing, collecting non-timber forest products, gardening etc.

Also note that the questions below are only meant to support the discussion. It is good, if the discussion participants themselves take up the topics mentioned in these questions. The facilitator does not have to ask all the questions, if the same topics rise in the discussion.]

2. Some simple warm-up questions:

[Note for the facilitators: The purpose of these warm-up questions is to relax the atmosphere by asking something simple, and to direct the thinking towards livelihood and energy questions.]

- What is the main livelihood in this village, i.e. how people make their living in this village?
- Are there any seasonal differences in livelihood, that is, do you do different work during dry season and rain season?
- Do you have electricity in the village?

3a) Have there been any major changes in the village during the past 3 years? What changes? Why?

3b) Have there been any major changes in the environment around the village (forest, land, river/lake) during the past 3 years? What changes? Why?

[Note for the facilitators: These are open questions and the purpose is to see if something surprising comes up that are not covered in categories in question No. 4 below. We are looking for changes that relate to livelihood, energy and migration to and from the village.]

4. CHANGES in the livelihood: what has happened?

- Have there been changes in the access to food/aquatic products/agricultural products? What kind of changes? Why?

- Have there been changes in income? (Increased yield due to irrigation, fertilization, pesticide use, etc. or decreased yield due to draught, flooding, etc.)
- Have there been any changes in access to land? For example due to changes in land ownership/plantation/dam/reservoir/logging? What kind of changes? Why?
- Changes in land quality? What kind of changes? Why?
- Changed access to water resources and quality of water resources? What kind of change? Why?
- Has there been changes in the use of or access to forest resources and/or the time used in collecting:
    - Fire wood?
    - Non-timber forest products?

  → What kind of changes? Why?
- Has anyone in your family been forced to move to the city? If yes, Why?

5. How do these changes affect your family? Why?

6a. If the changes have increased the income of your household, how do you use the increased income?

6b. If the changes cause problems to you and your family, how do you overcome these problems?

[Note to the facilitators: This is an open question, and discussion group should provide an answer, but if it is difficult, you can suggest different coping strategies; Borrowing from relatives? Borrowing from money-lenders? Selling cattle / selling land? Selling forest products such as timber, fruits etc. (If yes, specify)? OTHER coping strategies?

- What are the best ways to overcome problems? Why?
- Do you have "hungry months"? For how many months in a year? Why?
- If you do not have enough rice, what do you do? What are the substitutes? Why?
- What do you do if you suddenly need money for a doctor or something else?
- When do you usually have sudden need for money (illness, rice crop failure etc)?

7. Energy questions:

<u>On-grid villages:</u>

- For how long have you had electric grid?
- For what purposes do you use electricity? Household use (kitchen appliances, cooking, lighting), entertainment, work/business/agriculture?
- How many hours a day you have electricity?
- How much you pay for the electricity?
- What changes did the electricity bring to your life?
- Who benefits most/least from the electricity, why?
- What are the benefits and problems with electricity, why?

- Is anyone using electricity for business? For example, is there a garage, battery charging, ice factory, karaoke bar, shops that use electricity in the fridge etc.?
- What other sources of energy you use in your household? (Wood, charcoal, candles, gasoline, kerosene…) For what purposes you use them? (Cooking, lighting, irrigation, entertainment…)
- What kind of cooking stove you have (traditional, improved Lao stove, etc.)?
- Have there been any changes in the use of other sources of energy? Do you use more or less money on energy than before?

[Note to the facilitators: These questions are asked only in the villages that have access to electricity grid]

Off-grid villages:

- What forms of energy you use in your household? (Wood, charcoal, kerosene, batteries, gasoline) For what purposes do you use them? (Cooking, lighting, irrigation, entertainment…)
- From where do you get fire wood? (Community forest, private forest, plantation…)
- Is it easy to get fire wood? Why?
- Have there been any changes in wood collection?
- Have there been changes in charcoal production / purchasing?
- Have there been any changes in your energy use? Do you use more or less energy than before?
- Is energy cheaper / more expensive than 3 years ago?

8. How do you see the future of the village 3 to 5 years from now?

[Note to the facilitators: This question should be asked in all villages]

Focus group discussion (FGDs) topics: urban areas

*[Note for the facilitators: **The urban groups** focus on men and women who have **migrated from rural areas to the city.** The male group could be found e.g. by approaching motorcycle drivers and asking which ones have migrated. The female group could be found e.g. by approaching factory workers and asking which ones have migrated. The purpose is to analyze urbanization, food security of the people who have recently moved to the cities, and their coping/survival strategies.]*

- When have you moved to the city?
- Why did you move to the city?
- Did you come alone or with your family? If you have a family, how many children do you have?
- Are you going to be here for a long time, or will you soon return to the village? (E.g. are you a seasonal worker?)
- What has been the biggest change in your life when you moved to the city?
- What do you do for living**?**
- Where do you live – do you pay rent?
- Do you have electricity at your current home? If you do, what do you use it for?

- What source of energy do you use for cooking – wood/char coal etc?
- If you compare with the life in the village, do you now use different sources of energy? Why?
- Do you pay more or less for energy than you did in the village?
- Are you eating same kind of food here in city compared to the food you have eaten when staying in the village? Why? Do have more or less food than before? Why?
- Have you been unemployed or without money? If yes, what did you do?
- If your family stays in the village, do you send them money? Or do they send you money or food?
- How do you see your future 3 to 5 years from now? Will you be staying in the city or in the village? What will you do for a living?
- Do you have access to clean drinking water

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ISBN 978-952-249-147-3
ISSN 1797-1322

FINLAND FUTURES RESEARCH CENTRE

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