Nutrition Baseline Report

Resilient Livelihoods for the Rural Poor Project in Sepon District, Savannakhet Province and Lao Ngam District, Saravane Province
ACKNOWLEDGEMENTS

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Acronyms

 ANC  Antenatal Care
 DFAT  Department of Foreign Affairs and Trade
 DHO  District Health Office
 FAO  Food Agriculture Organisation
 FGD  Focus Group Discussions
 FNS-AP  Food Nutrition Security Action Plan
 GOL  Government of Lao
 HH  Household
 HPA  Health Poverty Action
 IP  Implementing Partners
 KII  Key Informant Interviews
 LANN  Linking Agriculture, Natural Resource and Nutrition
 LARLP  Laos-Australian Rural Livelihoods Programme
 MCH  Mother Child Health
 MSG  Monosodium glutamate
 NFTP  Non Forest Timber Products
 NNP  National Nutrition Policy
 RLP  Resilience Livelihoods for the Poor Project
 SLV  Saravane Province
 SVK  Savannakhet Province
 WEL  World Education Laos
 WFP  World Food Programme
1 EXECUTIVE SUMMARY

This report represents the findings from a nutrition baseline for the Resilient Livelihoods for the Poor (RLP) project in the Savannakhet and Saravane provinces of the Lao PDR. The primary aim of the RLP project is to improve the livelihoods of rural poor households through income generating activities and targeted assistance. The potential impact of such a livelihood intervention on household nutrition is of interest to partners in the Social Protection and Sustainable Livelihoods program, of which the RLP project is a component.

The key objectives of the nutrition baseline and endline evaluation are three-fold:

I. To capture unintended nutritional impacts for a sample of project beneficiaries.

II. To identify minor changes in household characteristics, status and behavior which may indicate a potential for improved nutrition outcomes in the future.

III. To better understand the interaction between the RLP objectives and the nutritional status of a sample of project beneficiaries.

Household subsistence nutrition is the primary lens through which the results have been interpreted for this evaluation. A mixed methods approach was used which included a household survey, focus group discussions, case study interviews and key informant interviews. A purposive sampling strategy was employed to recruit beneficiaries in the first cohort of the RLP. This included 110 households from Sepon district (Savannakhet province) and Lao Ngam district (Saravane province). A total of 252 people participated in the baseline study.

The baseline findings provides a snapshot of household subsistence nutrition in areas related to food consumption patterns, food sources, food expenditure, child feeding practices, food security and health. The key findings are summarised below.

Livelihood Activities and food security

- Households practice subsistence agriculture supplemented by seasonal labour for cash income. 100% of Sepon households and 95% of Lao Ngam households produce and consume their own rice. Cash income is an important household input and is used to meet basic needs. In Sepon, 50% of cash income is derived from seasonal wage labour, while in Lao Ngam 92% of households reported earning cash from wage labour.

- Women shoulder significant responsibilities in terms of household production and for the care of family members. The gender division of labour is pronounced in Sepon and Lao Ngam districts. This places pressure on women’s ability to manage household nutrition.

- Rice shortages were reported by all households in the sample. On average households experienced shortages for greater than half the year. The main contributing factors for rice shortages are due to inadequate land to grow rice, insecure land tenure, not enough productive household members and low rice yields.

- Households borrow money, land and rice to mitigate food shortages and to increase rice yields.

- Green rice is a hidden form of household debt. Green rice or khao kiew (in Lao) refers to paddy rice that is first harvested for the season. To meet shortfalls in rice and periods of limited employment, households in Lao Ngam are taking out loans (in rice, rented fields and cash) and repaying the principal loan and interest with green rice (khao kiew) from their harvest. Repayment terms range from 50-100% interest.

- Households have a high reliance on land for foraged food to meet dietary needs. Households grow staple carbohydrates such as rice, corn, vegetables and fruit. Foraged food contributes a
significant amount to the household diet, particularly for sources of protein (fish and frogs) and calcium-rich foods (crabs and insects).

- Rice, salt and MSG are purchased by most households. Over 90% of households use their surplus cash to buy these specific food items. Salt and MSG are used every day to make chilli condiments and enhance the taste of dishes and to extend the flavour of rice, which is often the main meal.

Nutrition

- Households have a diet that is low in nutritional diversity. Rice, salt and MSG are consumed every day of the week by households in both districts. Vegetables (mainly bamboo shoots) are consumed 6.5 days a week on average. Meat is consumed about 2 days a week, fish is consumed approximately 3 days a week. Fruit is consumed about 2 days a week in Lao Ngam and 5 days a week in Sepon.
- Food is prioritised for children. During times of food shortages in the year, parents and caregivers will prioritise rice for children to ensure they eat 3 meals a day. In Sepon 38% of households reported adults eating twice a day compared with 9% in Lao Ngam district.
- Inappropriate complementary feeding is undermining infant nutrition. Along with breastmilk, 75% of new born infants in Sepon households and 38% in Lao Ngam are given food within the first three days of life.

Health and Illness

- Water, sanitation and health in the community needs significant improvement. While most households have access to a protected water source all year round, 84% of Sepon households and 87% of Lao Ngam households drink untreated water. 98% of households in Sepon and 100% in Lao Ngam openly defecate. Hand washing with soap is not widely practiced. Of households with a child who had diarrhoea recently and provided oral hydration fluids, 22% of households in Sepon prepared the fluid correctly, compared to 42% in Lao Ngam.
- A quarter of households surveyed had a family member who was ill.
- In Sepon, 18% of households identified a member with a disability compared with 9% of households in Lao Ngam.\(^2\)
- Less than 35% of households could recall whether their youngest child had been fully immunised. Antenatal care visits for pregnant women is low with 39% of Sepon mothers and 24% of Lao Ngam mothers receiving an antenatal check-up.
- The local health service system is inadequate to support household nutrition. There are no nutrition specific projects in the target villages visited. Health outreach activities provided by the district health authority is under resourced and the staff are not equipped with knowledge or skills to identify, treat and refer cases of malnourished children.

Implications for the RLP and other livelihood projects: Lessons from the baseline findings

- Livelihood projects should clearly articulate the link between income generating activities and household nutrition outcomes. For example, an economic analysis of subsistence nutrition could provide insights into some key factors, starting with 1) minimum household energy needs, 2) the cost of this energy in terms of essential food items and 3) the cost of obtaining the minimum energy needs expressed as the available productive labour in a household.
- Project objectives should account for causes of malnutrition in the target area. Activities should allow communities to identify the causes of malnutrition in their own community and provide then with an opportunity to design their own solutions to tackle their nutritional issues.

\(^2\) HH survey participants self-reported household members with a disability (physical and mental). The UN defines persons with a disability as people who have long term physical, mental, intellectual or sensory impairments which, in interacting with various barriers may hinder effective participation in society on an equal basis with other people.
Nutrition is not only tied to food security, the social and physical environment also plays a major role in determining health and nutritional outcomes. Frequent and reoccurring illness and disease have a direct impact on a child’s physical and cognitive development. Integrating messages from Early Childhood Development, positive parenting and water and sanitation promotions with Infant and Child Feeding cooking demonstrations would ensure a more holistic approach towards improving nutrition status for the child and household.
2 INTRODUCTION

2.1 Purpose of report
The purpose of this report is to present the results from the baseline study of the Resilient Livelihoods for the Poor (RLP) project in Sepon and Lao Ngam districts. These findings provide an understanding of the contextual livelihood, food security, nutritional and health status of a sample of beneficiaries in the project at the beginning of implementation. Findings from this report will be shared with donors, RLP and WEL staff, Government of Lao (GoL) partners and project beneficiaries. Findings in this report will provide a foundation for comparison to the endline evaluation to be conducted at the end of the project in September 2016.

2.2 Objectives of RLP project
The Australian Department of Foreign Affairs and Trade (DFAT) funds the Laos-Australia Rural Livelihoods Programme (LARLP). LARLP has the principal goal of increasing the economic security and resilience of poor women and men in rural areas. The RLP is a component of LARLP, which focuses on expanding livelihood opportunities for vulnerable families in three districts across three provinces. The RLP is supported by three Implementing Partners (IPs). It is expected that the RLP will provide 1200 vulnerable families with a combination of assets and support over a period of 12 months:

1. Individual bank accounts.
2. Monthly stipends (100,000 LAK) to support the management of their assets.
3. Productive assets at a value of 1.8 million LAK.
4. Enterprise and financial literacy coaching through fortnightly household visits.

2.3 Objectives of baseline and endline evaluation
In July 2015, HPA engaged Insitu Development Consulting to carry out the baseline and endline evaluation (see appendix 1 for the TOR). The scope of the evaluation includes the following objectives.

The objectives are three fold:

I. To capture unintended nutritional impacts for a sample of project beneficiaries.
II. To identify minor changes in household characteristics, status and behavior which may indicate a potential for improved nutrition outcomes in the future.
III. To better understand the interaction between the RLP project objectives and the nutritional status of a sample of project beneficiaries.

The baseline was undertaken in two of the three project sites, in Sepon and Lao Ngam districts. It is understood that the project timeframe for the RLP is very short and because of this it will be difficult to establish whether the project has had an impact on household nutrition.

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3 Health Poverty Action, in Sepone district, Savannakhet province. World Education/ Village Focus International, in Lao Ngam district, Saravane province. CARE/ Handicap International, in Mounlapamok, Soukhoma districts, Champasak province.
4 The asset options includes: goats, pigs, poultry, mushrooms, home gardens.
2.4 Country and policy context

Laos is classified as a ‘least developed country’ ranking 138th out of 187 countries on the Human Development Index. According to the Global Hunger Index (2014), Laos has ‘alarming’ rates of hunger with a ranking of 61 out of 76 countries. Approximately one-quarter of the population lives in poverty, mostly in rural and remote areas. Malnutrition is a critical concern for the country as it struggles with high rates of stunting (44%) and underweight children (27%). According to the FAO State of Food Insecurity Report (2012), the proportion of the population in a condition of under-nourishment was still prevalent in Lao PDR at 27.8%. The World Food Programme (WFP) estimates that between 2005-2010 under-nutrition has resulted in a productivity loss of approximately $166 billion (USD).

According to the WFP, food insecure populations in Laos tend to be upland communities engaged in shifting cultivation on steep sloping fragile land, operating as smallholders and unskilled labourers. Households are considered to be asset-poor, with limited access to civil infrastructure, and subject to poor health and sanitation conditions. Mostly these households are ethnic minorities living in rural and remote areas of the country. A recent report on policy and program responses to food insecurity, gender and agriculture identified the following seven factors as key contributors to food insecurity in Laos:

1. Lack of knowledge about nutritious food by pregnant and postpartum women.
2. Strong cultural beliefs by some ethnic groups about food taboos for pregnant and post-partum women.
3. Lack of knowledge about appropriate child feeding and child care practices.
4. Small plots of arable land in upland areas.
5. Lack of food diversity, and the availability of food all year round.
6. Over emphasis on single cash crop production rather than a diversification of crops.
7. The prevalence of natural disasters (flooding and drought).

The seriousness of malnutrition and hunger underpinned by high concentrations of poverty has received attention from policy makers. There are national frameworks guiding policy and programming responses to under nutrition, these include:

- National Nutrition Policy (NNP) (Dec 2008), is aimed at accelerating the reduction of malnutrition among all ethnic groups and decreasing associated morbidity and mortality risks.
- National Nutrition Strategy and Action Plan for 2010-2015, is a strategic action plan for the stakeholders, ministries, development partners, and private sector to guide programs on malnutrition reduction and influencing factors.

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11 World Food Programme, Food and nutrition security atlas of Lao PDR, September 2013.
12 Civil infrastructure refers to systems that support human activities and development. For example, electricity and water supply, roads, transportation, education and health facilities, markets and services.
14 Ibid.
• The National Nutrition Committee aims to influence policy and includes high level representatives.\textsuperscript{15}

The relationship between nutrition, land tenure and poverty is explicit in Laos. It is appropriate that a livelihood project aimed at improving income generation for rural poor households should investigate its impact on the nutrition of these vulnerable groups.

2.5 Target Audience
This report is written for the RLP implementing partners: HPA, World Education and Care International who are implementing the project in the three sites. The report will also be of interest to Maxwell Stamp as contract managers for the RLP, DFAT as the program donor and Government of Lao authorities.

2.6 Structure of report
The report describes the methodology used in the baseline in section 3. Findings are organised by district to allow localised characteristics and issues to be explained in detail. Sepon district findings are reported in section 4 and Lao Ngam findings can be found in section 5. A discussion of the findings for both Sepon and Lao Ngam districts are outlined in section 6. This includes shared characteristics and challenges related to household nutrition and health. An analysis of the findings also considers the implications for understanding nutrition outcomes in a livelihood project. This is followed by section 7 which draws lessons from the baseline findings for an income generating project such as the RLP.

\textsuperscript{15} Such as: Ministry of Health, Ministry of Planning and Investment, Ministry of Agriculture and Forestry, Ministry of Education, National Commission for Mother and children, and Lao Women Union.
3 METHODOLOGY

The baseline and endline evaluation uses a mixed methods approach. The purpose of the approach is to examine different data sources to best establish the nutritional characteristics and status of selected households. The methodological framework includes three important elements. These include: 1) a baseline and endline tailored for a 12 month program; 2) that an external evaluation team will collect the data and analyze the results; and 3) and the involvement of poor and vulnerable households through the use of participatory data collection methods.

3.1 Sample strategy and size

Purposive sampling was used to determine which households would participate in the evaluation. At this stage of the RLP project, there are 412 household beneficiaries across the Sepone and Lao Ngam districts. From these two districts 110 households (55 HHs in Sepone and 55 HHs in Lao Ngam) were selected to participate in the baseline study. The household sample for the baseline and endline represents 27% of the project cohort one in these districts. A list of sample groups by evaluation method is provided in Table 1A appendix 3. The five sample groups included: 1) adult beneficiaries for the nutrition baseline survey; 2) males and 3) females for focus group discussions; 4) adult female beneficiaries for case study interviews; and 5) government health authority representatives for key informant interviews. A total of 252 people participated in the baseline.

3.2 Description of tools

All tools can be found in appendix 2.

1. Household Nutrition Survey

A survey questionnaire was developed to capture data in three key areas: nutrition (food expenditure, consumption), food security and livelihood activities. The survey also contained a small number of questions relating to illness, water and sanitation. Most of the questions were structured in a “Yes/No/Don’t know” pre-coded format with pictures where possible to ensure participant engagement with the questions and activities. The survey instrument also contained an observation section for enumerators to note issues on food hygiene, drinking water treatment, latrine access, animal pens and waste disposal.

2. Focus Group Discussions (FGD)

FGDs incorporated picture led discussions, semi-structured questions and participatory activities. Pictures and voting cards were used to stimulate discussion, encourage group participation and capture insights among community members. These tools were adapted from the Linking Agriculture, Natural Resource Management and Nutrition (LANN) community self-assessment tool. The three main topics included food sources, perceived food security and food diversity.

3. Key informant interviews (KII)

Interviews with the district health office, district hospital and health care center were conducted to capture the information about the ‘hard’ and ‘soft’ infrastructure available to support nutrition in the target community. The evaluation team also visited a health care center in each district. The team also conducted interviews at the Lao Ngam district hospital and district health office.

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16 Implementing partners, HPA and World Education, facilitated the household recruitment for the baseline in selected villages.

17 Cohort 1 beneficiaries will receive their assets and support from September 2015 and cohort 2 beneficiaries will receive their assets and support from Oct 2015.
4. Case study interviews

In-depth interviews were conducted with three women from each district. These interviews were used to capture participant narratives about household nutrition and to develop case studies based on the perspectives of women from vulnerable households. The interviews covered the same topics as the household surveys, in addition to a set of more detailed conversational questions.\(^{18}\) The evaluation team will follow up with case study participants at the endline survey to explore any associated impacts to their nutrition and livelihood status.

3.3 Data collection team and schedule

A team of five people collected data in the field. Prior to data collection, a three day training session was held to familiarise the field team with the evaluation topics, and to localise and test to evaluation instruments. The training also covered data collection process and procedures and data management. The evaluation team visited five villages in Sepone district and three villages in Lao Ngam district. See Table 1B appendix 3 for details on the data collection schedule.

3.4 Data analysis procedure

Household survey data was recorded and analysed using Excel. Qualitative data from FGDs, case study interviews and KII was first recorded in MS Word in Lao language and then translated to English. The quantitative survey dataset and qualitative dataset were analysed separately before they were thematically coded, compared, merged and synthesised. A presentation of preliminary findings was made to the IPs, Maxwell Stamp and DFAT prior to the drafting of the final report. Table 1C appendix 3 contains a description of the analysis procedure.

3.5 Limitations of methodology

The principal limitation is the timeframe for evaluation. The RLP is a twelve month project covering a large geographic area. This nutrition baseline survey was conducted after the project had commenced. At the time of writing this report the RLP baseline results was yet to be released by the managing contractor. This naturally limits the extent to which findings from the nutrition baseline survey can be associated or compared with the more comprehensive baseline data conducted in the RLP. In addition, while the project may result in a number of positive changes for participating households, it is possible that these changes will not be observable within the twelve month period allocated.

Moreover, the scope of the nutrition survey is limited. Due to time and resource constraints several relevant factors, such as (mal) nutrition knowledge or status in the community; food storage and hygiene; micronutrients for women and children and energy intake for individuals were not incorporated into the study. The inclusion of these topics would have provided additional information about the level of knowledge in the community, and would assist in understanding which individual behaviours or activities have the most potential for improving nutrition outcomes. Without explicitly linking these topics in the baseline and endline data collection process, it will be difficult to demonstrate how the RLP has influenced nutrition seeking behaviour at the individual level.

\(^{18}\) Conversations covered the following themes: aged and gendered division of labour, causes and consequences of rice shortage, food taboos during and after pregnancy, birthing practices, infant and young children feeding, perceived nutrition status of their children, child’s illness and health seeking behavior.
4 FINDINGS FOR SEPON DISTRICT, SAVANNAKHET PROVINCE

4.1 Household demographic profile
55 households were surveyed in five villages in Sepon district, Savannakhet province. Participants from these villages were mostly from the Makong ethnic group (64%) (Table 1).

Table 1 HH surveys in Sepon District villages and ethnic groups.

<table>
<thead>
<tr>
<th>Villages</th>
<th># Households</th>
<th>Ethnic Groups</th>
<th># Households</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Xoung</td>
<td>11</td>
<td>Makong</td>
<td>35</td>
<td>64%</td>
</tr>
<tr>
<td>2. Nongniew</td>
<td>11</td>
<td>Tri</td>
<td>19</td>
<td>35%</td>
</tr>
<tr>
<td>3. Huk</td>
<td>13</td>
<td>Lao</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>4. Kengkok</td>
<td>3</td>
<td>Total # HHs</td>
<td>55</td>
<td>100%</td>
</tr>
<tr>
<td>5. Ahore</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total HHs Surveyed</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The 55 participating households comprised 324 people, with a high proportion of children and young people. Children, and young people under 15 years of age, represent 52% (n=170) of the total household population for this sample group (Table 1D in appendix 4). The average household size for the sample is 5.9 people, and 96% (n=53) of household heads are male. The average number of children in the sampled households is 3.8 per household unit. One household reported having 10 children with the household head having two wives. Four of the sampled households reported not having any children.

The dependency ratio for Sepon households is 122 per 100 working age people (15-64 years). This means that in households surveyed for this baseline, each working age person needs to support 1.2 dependents (children under 15 years and elderly people over 65 years old), as well as themselves.

Households reported having low levels of schooling. Of the 55 households surveyed, 15 (27%) had at least one male who had never attended school. For females, 30 households (55%) reported at least one female member who had never attended school. Only 11 households (20%) reported having a family member who had completed primary school.

4.2 Livelihood Activities

4.2.1 Households are subsistence farmers who earn cash income from seasonal labour work.

All households are subsistence rice farmers. Households combine multiple livelihood activities to meet basic subsistence needs and to generate cash income. Wage labour represents 50% (n=25) of cash income sources for households, 38% (n=19) is derived from selling garden produce and 22% (n=11) of income comes from selling forest products (see Figure 1A, appendix 4).

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19 Most households or 68% (n=37) contain between 3.4 to 8.4 people. Two households are females living alone and the largest household size in the sample contains 14 people.

20 Age dependency ratio is the proportion of ‘dependents’ (population under 15 years and population over 65 years) and proportion of working population (15-64 years). The ratio is calculated by adding together the percentage of children (aged under 15 years), and the older population (aged 65+), divided by percentage of the working-age population (aged 15-64 years), multiplying that percentage by 100 so the ratio is expressed as the number of ‘dependents’ per 100 people aged 15-64 years. The higher the dependency ratio, the more people who are not of working age, and fewer who are in the labour force. [http://data.worldbank.org/indicator/SP.POP.DPND.OL](http://data.worldbank.org/indicator/SP.POP.DPND.OL)
Cash income from seasonal wage labour provides an important means for households to meet food shortages. In addition, to seasonal wage labour, participants reported selling their produce or NFTPs to Vietnamese traders.

“Our main source of income is from labour work and finding bamboo in the forest to sell to the Vietnamese”. Ms. Mee, case study #1, Sepon.21

“I am a rice farmer and I also collect mushrooms or roots in the forest to sell to the Vietnamese”. Ms. See, case study #3, Sepon

“We plant a lot of papayas, bananas and some pineapple because we sell them to the Vietnamese”. Men’s FGD Sepon.

Of the households surveyed, 78% (n=43) reported raising livestock. Of this group 95% (n=41) raise poultry, 74% (n=32) raise pigs and 12% (n=5) raise goats. Many respondents reported that they are raising animals owned by their relatives, neighbours or friends. One participant explained that she expects to receive one of the off-spring as ‘repayment’ for this effort. Of the total sample, only 8% of all respondents (n=3) reported income from selling livestock.

4.2.2 Households have an uneven division of labour.

Households in Sepon have a high proportion of dependents. Across the sampled group 23% (N=73) were children aged 5 years or under, 30% (n=97) aged 6-14 years and 2% (n= 8) are 65 years or over (Figure 1).

**Figure 1 HH age and gender distribution, Sepon District**

![HH age and gender distribution chart](image)

Source: HH survey, n= 55 Sepon District

A rapid demographic assessment reveals that there are fewer females in each of the age categories. Of the 146 (45%) working-age (15-64 years old) persons, women make up 48% (n=70). This demographic band represents the most productive age cohort for both women and men. FGDs and case study interviews indicate that women shoulder a large proportion of the household

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21 Pseudonyms are given to case study participants to protect their identity.
responsibilities, particularly in caring, cooking and household production. Men in focus groups explain the division of roles and responsibilities in their households:

“My wife, she’s ‘in charge’, she decides what vegetables she wants to plant, like pumpkins and melons. I don’t get involved. We weed and tend the crops together”. Men’s FGD, Sepon

“Wood is used for cooking fuel, we get it from the fields and forest. Both husband and wife collect wood but mostly it’s the wife that carries the wood because she needs it for cooking. I know we need it for cooking but I don’t like to carry it. Mostly it’s the women that carry wood”. Men’s FGD Sepon

These quotes show that household level provisioning, such as growing food and food preparation (e.g. cooking and collecting fuel), is the responsibility of women. While men recognise that these activities directly benefit them and the larger household unit, it appears from these expressed views that the gendered division of labour can be inflexible. Women are acutely aware of their responsibilities. One woman states plainly how she manages her responsibilities, and the cost it imposes on her child’s nutritional needs:

“When working in the fields, we leave our baby at home with our husband. He feeds the baby rice and I breastfeed the baby when I return from working in the field”. Women’s FGD Sepon

4.3 FOOD SECURITY

4.3.1 Rice shortage is experienced by all households.

All households reported experiencing annual rice shortages. The average number of months that households have enough rice to eat is 5.2 (Figure 1C appendix 4). One household reported having enough rice to eat for 1.5 months and only one household reported having enough rice for 10 months. Most (68%) households surveyed reported having a rice harvest that provided between 3 to 8 months of household rice consumption.

Focus group participants stated that the period of rice shortage can begin from March and last through to September. This can mean a rice shortage of up to seven months for some households. Participant data from this baseline confirms findings from the recent Livelihood and Market study conducted for Sepon and Nong districts. Household members were asked to estimate the volume of their most recent rice harvest. The reported average rice yield for households was 645kg (12.9 ‘pao’). The lowest reported yield was 120kg (2.4 ‘pao’). The household with the largest yield produced 1,500kg of rice (30 ‘pao’).

22 Women have a responsibility for child bearing, care for household members and food production. This triple burden is evident in reports by women in this baseline about having many children (often unplanned), caring for families members through the provision of food, water, cleaning and supporting activities, in addition to growing and foraging for food and working secure income for food. Participants in the women’s focus groups expressed that they were ‘tired’ and ‘life is hard’. The facilitators did not ask if or how the women have used strategies to change the gendered division of labour.

23 The study found that households in Sepon and Nong districts experienced rice and food shortage between April to October, with May to August being the critical hungry months. Lovera, Pascal, Livelihood and market study, Sepon and Nong districts, Savannakhet Province. Safe steps forward: Integrated unexploded ordinance threat reduction and impact mitigation in the Lao PDR’. Handicap International. P.10.

24 This estimate was reported by a household of six people, comprising two adults and four children. This amount of rice equates to approximately six weeks of food for a household of that size and composition.

25 According to this household, this yield generated 10 months of food for the household unit. The unit comprised three adults and six children.
All households practice swidden upland rice cultivation which produces a lower yield than wet rice paddy farming. In addition to the mode of cultivation, there are factors which contribute to low yields. In many instances, households have a limited supply of productive male labour for farming. Ms. Koun, a case study participant explains how a shortage of labour has affected her household:

“Before my husband died 4 years ago, we had enough rice to eat because he helped me to plant rice. These days my son helps me with planting rice but he’s still young. With just the two of us now, planting both rice and bananas on half a hectare of land, we can’t plant as much as we did before. Last year our yield was 10 pao (50kg of paddy rice). The rice was only enough for three months. For the rest of the year we had to buy rice”. Ms. Koun, case study #2, Sepon

In this case, Ms. Koun’s household produces enough for each person to consume approximately 227 grams of rice per day for three months.\(^{26}\) Limited access to productive land coupled with labour shortages can severely impact a household’s ability to grow enough rice to sustain its members. Ms. See explains her circumstances:

“It’s been 5 years now that I don’t have enough rice to eat because I’m old and I can’t plant much rice. When my husband was alive there was enough rice to eat. I was planting rice on land the size of about 30m\(^2\). This land belongs to someone else. I plant rice far away from the village where there’s no owner or I ask to plant next to other people’s land where it’s vacant and I don’t have to pay anyone for using the land. When I run out of rice, I ask my daughter and other relatives to have some of their rice. When they don’t have not enough to share, I eat bamboo shoots instead”. Ms. See, case study #3, Sepon

Ms. See’s case highlights several of the key factors which contribute to food insecurity. First, where female headed households have lost productive males. Secondly, an elderly female living alone. Third, swidden cultivators growing rice on increasingly small plots of land, fourthly the lack of land tenure means the ability to grow food is highly insecure. Lastly, the above quote demonstrates that households will rely on family networks and foraged food to meet the food gap. This extended kin and social network is itself likely to be food insecure for a significant portion of the year.

4.3.2 Cash borrowings by households are used to meet food shortage.

A third of households reported borrowing cash. Of this group, 88% (n=15) borrowed money from family/friends and the remaining 12% (n=2) borrowed from the village head or village fund. Approximately half (53%) reported borrowing money in order to buy food (Figure 1B in appendix 4). This practice was especially prevalent during the “hungry months” from March to September.

4.3.3 Households have a high reliance on land for forage food to meet dietary needs.

Households in Sepon rely heavily on the land for their own production and foraged food. Over 50% of focus group participants identified land as a source for food production, primarily for growing rice, corn, vegetables and fruit (Figure 2). The importance of land for subsistence nutrition among poor households was described by one male focus group participant in the following way: “We buy very little vegetables in the markets because we plant ourselves and it’s enough to eat so we don’t need to buy. We plant other crops in our rice fields mixed together” (Men’s FGD Sepon). Surrounding forest areas are also important sources of household nutrition. Households reported accessing ‘meat’ (fish, frogs), calcium in the form of insects and small fish eaten whole from nearby forest areas.\(^{27}\) Oil and fats are grown in the form of peanuts or animal fat purchased from local markets.

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\(^{26}\) After paddy rice has been milled to remove the husk provides about 50-60% of edible rice.

\(^{27}\) Communities in this baseline live in areas with depleting foraged areas due to increasing encroachment of commercial farming of mono crops such as rubber. The evaluation team observed that villages in this baseline
4.3.4 Rice, salt and MSG are purchased by most households.

Household expenditure is concentrated on a small number of food items. Over 90% of households in the sample reported spending surplus cash on either rice, MSG or salt (Figure 3). Less than 20% of surveyed households reported buying fruit, eggs, vegetables, roots/corn or calcium-rich food, on the grounds that these items can be secured through foraging. These expenditure patterns highlight the strategies used by households to manage prolonged periods of rice shortage. In addition to buying rice, households purchased salt and MSG in order to enhance and extend rice based meals.

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was surrounded by a rubber plantation. This has reduced the source of mushrooms, frogs and fish available to households.
4.4 NUTRITION

4.4.1 Households have low diet diversity.

Survey results indicate that households have limited nutritional diversity in their diet. Participants in the household survey and focus groups were asked to identify food items eaten in the previous week. All households surveyed report eating rice along with salt and MSG every day of the week (Figure 4). Vegetables (bamboo, cassava and green leaves) and fruit (bananas) are consumed by households 6.5 and 5 days a week respectively. Calcium (insects and small fish), oil/fats and condensed milk are consumed 3-4 days a week on average.
While households routinely experience food shortages, families prioritise rice and other food stuffs so that children can eat at least three times per day. On average, children under 5 years of age eat 3.7 times a day, while older children will eat 3 times a day. Adults eat 2.6 times a day on average (Table 1E appendix 4). A typical response regarding household food consumption priorities is exemplified by the following quote:

“Most of the time parents eat just two meals, breakfast and dinner because there’s not enough food and we want our children to eat (3 meals), so we’ll eat bananas and corn instead”. Men’s FGD, Sepon.

Participants in the focus groups agreed that parents or adults will go without a meal in order for children to eat rice. In this sense, rice is seen by families as being the most important food item because it is perceived as being able to stave off hunger and illness. A case study interview explains the precarious link between livelihood activities and the amount of meals eaten each day:

“Last week we only ate rice for three days. The day before we ran out of rice; and there wasn’t anyone hiring us. The small children got to eat a little bit of rice. We run out of rice every year but from August to October it rains every day during this period, so no one is hiring us for work”. Ms. Mee case study #1, Sepon.

A significant proportion of adults in the baseline are foregoing a meal in order for their children to eat. Of the 55 households surveyed, 38% (n=21) report adults eating only two meals on the day before the survey (Table 1F, appendix 4). Five respondents (9%) reported that the children under 5 years of age in their households (9%) had only eaten twice on the day before the survey.
Participants are highly sensitive to the pressures caused by rice shortages. Evidence from the fieldwork data states clearly that households are failing to meet the basic nutrition needs of family members on a daily basis. One focus group participant explained the impact of not meeting subsistence nutrition on the relationships and health of household members:

“When there’s not enough food it affects our family, for example someone is always sick or lethargic. When there’s not enough rice to eat and not enough money to buy food the husband and wife will argue. The children will cry because they’re often sick and hungry”. Men’s FGD Sepon.

4.4.3 Inappropriate complementary feeding is undermining infant nutrition.

Of the households with young children, 86% (n=44) reported using a combination of breast milk, baby formula powder and rice to feed children under 5 years.28 Of the 44 households using combination feeding, 75% (n=33) report feeding rice porridge to new born infants within their first three days of life (Figure 5). Only 5% (n=2) of households report introducing food to infants from six months of age as is the recommended practice.

The early introduction of food in infants points to two key issues. First, parents do not have adequate knowledge about infant feeding and nutrition. A common explanation for feeding rice to new born infants is exemplified by Ms. See’s quote (below) that rice soothes crying and satiates hunger:

“She was born in the morning and I fed her rice in the evening. I need to feed her both rice and milk. The baby won’t stop crying if I don’t feed her rice. When I work in the fields. I leave her (baby) with my mother-in-law who feeds her rice”. Ms. See, case study #3, Sepon.

Figure 5 Introduction of food in infants, Sepon District

Introduction of food in infants in Sepon District, SVK

After 6 months 5%
From 3-179 days 20%
From birth to 3 days 75%

Source: HH survey, n=44, Sepon District

Second, women’s responsibility for household food production means they have less time to breastfeed their new infants. The drivers for this infant feeding practice, as illustrated by quotes from focus groups and case study interviews, appears to be two fold. The household division of labour

28 Breastfeeding of infants is high among the 51 households who have children, with 92% (n=47) of households report having ever breastfed their children. However only 2% (n=1) report exclusively breastfeeding their children.
places the burden for household production and reproduction on women. At the same time, household livelihood activities fall significantly short of meeting subsistence nutrition. In basic terms, one less productive day by a woman can translate to fewer meals for the family to eat the next day.

4.5 HEALTH AND ILLNESS
The household survey did not cover issues relating to disease, illness or sanitation. A small number of health measures were identified. These measures were viewed as having either a direct bearing on either livelihood activities or nutrition outcomes. One of the findings in this baseline is that a large number of households (59%) borrow cash in order to access basic health care. This highlights the difficult trade-offs that households make when considering health and livelihood outcomes for their members. Additional health related findings for Sepon are summarised in the section below.

4.5.1 Households sanitation and health need significant improvement.
85% (n=47) HHs access drinking water from a protected source, such as a water pump from a bore well. However, the majority (84%) of households drink this water untreated. The rate of open defecation is also high at 98% (n=54). Based on observations of the interior and exterior of houses, of the 43 households that were raising animals, only 5% (n=2) kept their animals separate from the main dwelling.

4.5.2 Household members with an illness and disability need support.
Of the 55 households surveyed, 18% (n=10) of households have a person with a disability.29 Of this group, nine are males and one is female. At the time of the survey, 29% (n=16) of households had one person who was ill from either a short term condition (<3 months) or a long term health problem (>3 months). Of this group, nine males were identified as being currently ill. Households were also asked about a household member who has passed away in the last year. Of the people who have passed away, three were females aged 50 and over, and two were males (5 years and 20 years). The reported number of persons with an illness or disability in this baseline may suggest women will have additional caring responsibilities.30 On a positive note, malaria prevention through the use of bed nets was practiced in 95% (n=52) of households.

4.5.3 Pregnant women have limited access the district clinic for antenatal check-ups.
Of the 51 households with children, 39% (n=20) reported that mothers received antenatal care with their youngest child. Of those 20 households where women received antenatal check-ups, 85% of women (n=17) attended the district clinic and 15% (n= 3) attended the district hospital. Of the women who received antenatal care visits, 20% (n =4) had 4 or more visits. 31

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29 This was from an untreated disease/ illness, accidents, a birth defect or mental health issue.
30 It is worth pointing out that higher proportion of males with a disability and who are ill will reduce the productive labour in a household in turning limiting the livelihood activities of households and placing additional responsibility on women to care.
31 Compared with 31.5% of all women in Savannakhet province who received 4 or more visits.
4.5.4 Diarrhoea management is poor.

Of 55 households, 59% (n=32) reported their child under 5 years had diarrhoea this year, and of this group 62% (n=20) of parents/caregivers provided the child with Oral Rehydration Salts (ORS). Of the households who reported administering ORS, only 20% (n=4) could explain how to mix ORS correctly.

4.5.5 Child immunisation knowledge and access is limited in villages.

Of the 51 households with children, only 2% (n=1) of households report their youngest child being fully immunised. 59% (n=30) reported that their child was not immunised. It is likely that this high figure is attributable to the young age of the children. Immunisation was difficult to verify as 80% (n=40) of households with children were unable to produce a yellow child growth and immunisation card.
5 FINDINGS FOR LAO NGAM DISTRICT, SARAVANE PROVINCE

5.1 Household demographic profile

55 household surveys were conducted in three villages in Lao Ngam district, Saravane province. 56% of participants identified themselves as being from the Souay ethnic group, followed by 33% Tanang, 5% Lao Loum, 4% Tha-oy and 2% Laoven (Table 2).

### Table 2 HH surveys in Lao Ngam district villages and ethnic groups

<table>
<thead>
<tr>
<th>Lao Ngam district</th>
<th># households</th>
<th>Ethnic groups</th>
<th># households</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kebphueng village</td>
<td>18</td>
<td>Souay</td>
<td>31</td>
<td>56%</td>
</tr>
<tr>
<td>Kang village</td>
<td>21</td>
<td>Tanang</td>
<td>18</td>
<td>33%</td>
</tr>
<tr>
<td>Santhong village</td>
<td>16</td>
<td>Lao</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
<td><strong>Tha-oy</strong></td>
<td><strong>2</strong></td>
<td><strong>4%</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Laoven</strong></td>
<td><strong>1</strong></td>
<td><strong>2%</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
<td></td>
<td></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The 55 households surveyed in Lao Ngam had a total of 285 people. Children, and young people under 15 years of age, made up 58% (n=165) of the sample group (Table1G appendix 4). The average number of people in the sample household for Lao Ngam district is 5.2 people. 82% (n=45) of household heads are male. Ten households were female headed households, six are widowed, three are divorced and one woman is separated.

The dependency ratio for the Lao Ngam sample is 142 persons per 100 working age people (15-64 year olds). This means each working age person needs to support 1.4 dependents, who are children under 15 years of age and elderly people over 65 years old, as well as themselves.

Households have low levels of schooling. Of 55 households, 36 (65%) reported having at least one male who had never attended school. For females, 45 households (82%) reported having at least one female member who had never attended school. Only 12 households (22%) reported having at least one person who has completed primary school.

5.2 Livelihood Activities

5.2.1 Households are mostly subsistence farmers who rely on seasonal labour for cash income.

In Lao Ngam, 95%, (n=52) of sampled households are subsistence rice farmers. The main source of cash income for households is seasonal wage labour (92%, n= 48), followed by the sale of garden produce (13%, n=7), selling non forest timber products (NFTP) (6%, n=3), running a small business (4%, n=2) and from the selling of livestock (2%, n=1) (Figure 6). While seasonal wage labour is the main source of cash income for many families, for landless households it can be the only source of income.

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32 One household included seven children where the household head had two wives. Two households do not have children.

33 Most households (68%) had between 3.3 to 7.1 people, with the largest household size in the sample containing 11 people.

34 These seven households (13%) reported having multiple livelihood activities.
As one respondent stated: “I have been working all my life. I don’t have any land” Ms. Keo, Case study #6, Lao Ngam.

Figure 6 Main sources of cash income Lao Ngam District

![Cash income pie chart]

Source: HH survey, n= 55, Lao Ngam District

Cash income is important for rice producing households. Cash provides families with a means by which to bridge periods of food shortage. However, as participants explained, wage income can have a negative opportunity cost in terms of lost production time. One man from Lao Ngam described the trade-off in the following way:

“...right now we have to buy everything, even rice, and sometimes buy fish, crabs and meat because we do labour work and don’t have time to forage. If we get money from working and use it to buy rice, but it’s still not enough to feed us everyday. We don’t get a lot of money [from working] because our labour is cheap”. Men’s FGD Lao Ngam

In addition to low wages being inadequate to meet household food requirements, participants talked about the seasonal nature of employment opportunities. A woman explains the hiring cycle for the year:

“January and February we plant sweet potatoes for other people, March – April we clear fields; June-July we start to plant rice. August-September, we forage and plant our own vegetables. November-December is rice harvest time”. Women’s FGD, Lao Ngam.

Households in Lao Ngam also reported that both husband and wife are often engaged in wage labour on private farms in their village, or with commercial farms in the district or province. Ms. Keo provides a typical example of the way households interact with the casual labour market:

“My husband and I find work through people in the village, who tell us that they need someone to clear weeds or plant. Or a company truck comes to the village and recruits people to work that day. When I am not working I tend to the crops and look for food in the forest”. Ms. Keo, case study # 6, Lao Ngam.
While many households earn cash income through seasonal labour, some households prefer payments in rice. A man in a focus group explains how ‘rice’ payments work:

“We sometimes work for rice by doing weeding, rice harvesting and clearing fields. For 3 days of work we get 1 ‘kapib’ [equals to 10-15kg] of rice. Or if we get payment of 25,000 kip a day and we use that to buy rice and MSG”. Men’s FGD, Lao Ngam

One female participant argued that payment in rice was a better option for her household:

“I don’t buy rice because I don’t have enough money to buy the big bags of rice. I work for rice as payment instead. I work 3 days clearing weeds, planting rice and sweet potatoes and I get 1 bucket of rice as payment, which feeds my family for 8-9 days. Once we have rice to eat, I’ll stop working for a couple of days to work on my land and then look for work when I start to run out of rice again”. Ms. Sengchan case study # 4, Lao Ngam

The above quotes highlight the challenge faced by poor households engaged in a mixed economy of rice cultivation and wage income. Unskilled and low skill work provides income that is below the cost of purchasing rice. Throughout the survey it was consistently reported that households will choose rice payments over cash for the same number of days worked.

5.2.2 Households have an uneven division of labour.

Lao Ngam households have a high proportion of dependents, with more than a quarter (26%, n=73) of the population aged 5 years or under, and 32% (n=97) aged between 6-14 years (Figure 7). There are fewer females in all age categories, except for the working-age (15-64 years old) group of which makes up 35% (n=101) of the sampled population. Women make up 55% (n=56) of the overall working age demographic. This age group represents the most productive years for both men and women. Focus groups and case study interviews reveal that both men and women perform wage labour, although women’s main duties are caring and cooking especially when children are young. The following quote describes the division of labour:

“Generally, the wife stays home and looks after the children while the husband goes to work. Women stay home and do housework like fetching the water, cooking and cleaning. In families where the children are old enough, both husband and wife work or else there won’t have enough to eat”. Men’s FGD Lao Ngam

Girl carrying firewood, Lao Ngam District
5.3 FOOD SECURITY

5.3.1 All households experience annual rice shortages.

All households in the sample reported experiencing rice shortages. The average number of months that households have enough rice to eat is 5.2 months (Figure 1D appendix 4).35 One household reported having enough rice to eat for one week in the year. Only one household in the sample reported having enough rice to last the household 11 months.

Participants stated that rice shortages could begin as early as January, and sometimes extend from March through September. This means that households experience rice shortages for more than half the year. One of the case study participants, Ms. Vanh, explained the situation using her own household as an example:

“Last year our 0.5 hectare field produced 1 ton and 5 ‘kapib’ (1,050 kg) of paddy rice. It was enough to feed our family for only 7 months. At around March - April we would run out of rice and from May to October we have to buy rice We have a small plot of land to plant rice but a big family to feed. We need 3 tonnes of rice to have enough to eat each year”. Ms. Vanh, case study #5, 11 people household, Lao Ngam

Household participants were asked to estimate their most recent rice harvest. The average rice yield in Lao Ngam was 782kg (15.6 ‘pao’). The lowest yield was 25kg (0.5 ‘pao’) and reported by a household of two people, a widowed mother and her son. Two households produced the largest yield with 2,500kg (50 ‘pao’) by a family of four (two adults and two children) and by a single mother with five children.

The household of six people had given some of their rice to relatives, which left the family short of rice last season. While the household of four had rented land for 500,000 kip per year, they are paying...

35 The majority (68%) of household shortage ranging from 3-8 months of the year.
rent with their harvested rice. This household will pay approximately 750-1000 kg of rice for the rent of land. Of the 2500kg produced the household will be left with 1750-1500 kg of rice for four people to eat throughout the year.  

Households mostly practice wet paddy rice farming with some upland cultivation. Although wet rice cultivation can have a higher yield, participants explained that their rice shortage is due to a lack of land which drives some households to rent additional land for planting rice. One man in a focus group discussion stated that:

“We don’t have enough rice because we don’t have enough land for production. The land we use isn’t even ours, we rent it”. Men’s FGD, Lao Ngam

Of the 55 households, 28 reported having land to plant rice. It was later revealed that many participants were in fact farming land that belonged to their parents. In addition, about half (49%, n=27) of the sampled households reported renting land to plant rice because they were either landless or had insufficient land to produce enough food for their families.

5.3.2 Green rice is a hidden form of household debt

Households employ a range of strategies to overcome rice shortages. Participants report that persons of working age will work for cash income where possible, while farmers will attempt to maximise their rice production by paying for inputs (land, machinery, labour and fertiliser). However, during periods when households run out of rice and work is not available, participants reported borrowing cash, rice or assets and repaying with their rice harvest or “Khao Kiew” (green rice). Green rice is provided as an upfront payment to enable families to borrow cash or quantities of rice. The full debt is repaid using the following year’s rice harvest, based on terms that are negotiated directly between the lender and borrower. The interest on Khao Kiew can range from 50 – 100% and the principal debt and interest are often repaid within the next harvest season. A quote from a woman in the case study illustrates the arrangements:

“We are renting 0.5 hectare of land from another person with “Khao Kiew” (green rice). For the 0.5 hectare we repay 50 kapib (= 500kg) of paddy rice. We borrow money to buy clothes for children to go to school and repay with our green rice (first harvest). They (lenders) give us 100,000kip and we repay with 10 kapib (=100kg) of paddy rice. I borrow 600,000 kip for my children so I owe them 60 kapib (=600kg) of green rice. Everything needs rice, so that’s why we never have enough rice to eat”. Ms. Vanh, case study # 5, Lao Ngam

A focus group participant describes the difficulty of trying to meet his family’s nutritional needs using green rice debt:

“Our rice harvest from last season can feed us for 2-3 months. When we don’t have money to buy rice, we borrow rice. For example we borrow 5 -10 ‘tang’ (1 tang= 15-20kg). Next year when we have rice we repay interest on the borrowed rice so we have even less rice to eat. We tend to borrow rice more than buy because sometimes we don’t get work. If we borrow 10 tang we pay back 15 tang of rice within 1 year”. Men’s FGD Lao Ngam

These quotes demonstrate a form of hidden debt in households where they try to bridge the gap during periods of food shortage. The findings highlight the fact that households perceive the wage labour market as being unreliable in terms of securing basic food demands. Instead, households would rather borrow rice with a 50% interest repayment than enter the wage labour market.

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36 Participants only reported the land rent cost, if they a rented a tractor or borrowed fuel for the tractor is included in the agricultural input this will also reduce their rice stock for consumption.
This strategy of borrowing and repaying with rice is a short term “stop gap” measure used by households in an attempt to meet their subsistence nutrition requirements. This hidden rice debt also contributes to the overall household debt cycle as another focus group participant explains:

“When I work for money I don’t have time plant rice, so we borrow rice from people who have surplus rice and we repay in rice. We always need to work”. Men’s FGD, Lao Ngam

5.3.3 Cash borrowing by households is used to meet food shortages and increase agricultural input.

In Lao Ngam, 58% (n=32) of households borrow cash and of this group 62% (n=20) of households reported borrowing from local money lenders or a village fund in their community. This is followed by 53% (n=17) borrowed from their friends and relatives. When asked the reasons for borrowing cash, over half of the participants stated that it was for seeking medical care and services (63%, n=20), followed by purchasing food (41%, n=13), a quarter for agriculture inputs (25%, n=8) (Figure 1F appendix 4).

Up to a quarter of households borrowed cash for agricultural inputs, including land rent, tractors, fuel, fertiliser and seeds for the rice. Often participants would say that the low rice output was the main reason for their rice shortage. The lack of rice was viewed as the major cause of household debt. As one man describes:

“There’s not enough rice because we have small land and we have debt. When we have rice we use it to repay our debt because we can’t repay in cash. If we work there is less time for people to plant rice. This means we can’t grow enough rice to eat, so we need to borrow. We need two things to grow more rice: first is land and the second is human labour. This is not possible if the husband works [for cash income] and the wife does the rice farming. My wife can only clear half the land so we only get half of the rice [yield for the land size] which we also need to repay our debt”. Men’s FGD, Lao Ngam

5.3.4 Households have a high reliance on land for foraged food to meet dietary needs.

Households in Lao Ngam sourced most of their food from farms and gardens, or by foraging in the forest. Focus group data suggests that more than half (57%) of the carbohydrates (e.g. rice, roots and corn) were sourced from the participant’s own land, with more than a third (37%) being purchased (Figure 8). Vegetables (61%), oils (60%, mainly from peanuts, animal fat and coconuts) and fruits (47%) were mostly from household gardens. Meats (55%) including wild animals and calcium (85%) were derived from insects and small aquatic animals consumed whole with the bones are sourced mainly from foraging.
A common view expressed in focus groups was that the forest is an essential resource for households to meet their consumption needs:

“We mostly get meat like frogs and fish from the forest which is enough to eat but not to sell. Sometimes we can forage enough sometimes we don’t but it doesn’t run out”. Men’s FGD Lao Ngam

This quote also suggests that forest resources have changed and the available quantity is not enough to allow households to generate income from it.

5.3.5 Households view rice, salt and MSG as staples.

Almost all households buy salt (98%), MSG (98%), and rice (89%). Salt and MSG were preferred over vegetables. According to one participant: “We don’t by any vegetables in the market as we don’t have money. If we have money we save it to buy Padek and MSG”. Men’s FGD Lao Ngam. The results indicate that rice, salt and MSG are considered as food staples in all households. This perspective was confirmed throughout the FGDs:

“Rice is the most important thing we have to buy. We work until we have enough money to buy one ‘pao’ (50kg) of rice (paddy rice), which is 250,000 kip. It lasts about half a month for our family….That’s the only thing we buy, if we have rice, everything else we can find as long as we have rice”. Ms. Keo, case study # 6, Lao Ngam.

Participants were asked about their most recent food purchase. At the time of the survey, households report buying animal protein (71%), which participants differentiated based on whether the meat was to be consumed by the household or purchased for special occasions such as Buddhist ceremonies and weddings (Figure 9). Ms. Vanh a case study participant explains: “We only buy beef when it’s a special occasion when a cow is killed and each household in the village puts in 50,000 kip for a 1-2kg piece of meat”, case study #5, Lao Ngam. Fish and aquatic animals were purchased recently by only

Villages in this baseline are facing land pressures from commercial farming which has over time reduced forest areas available for foraging.
20% of households. Almost half of households (44%) bought sweets and candy for their children and 40% of households bought alcohol for special occasions. Approximately a third or less of households purchased vegetables (35%), fruits (33%), oil (24%) and calcium rich foods (9%).

Figure 9 expenditure on food items, Lao Ngam District

HH expenditure by food items in Lao Ngam District, SVN

Source: HH survey, n= 55, Lao Ngam District

5.4 NUTRITION

5.4.1 Households have low dietary diversity.

Participants in the sampled group reported having low levels of food diversity. According to household survey responses (Figure 10) salt and MSG were consumed daily by participants. Rice, followed by vegetables, were consumed on a near daily basis. This suggests that salt, MSG and rice in particular, are the main household staples. As one participant said: “What we eat the most and is the core of every meal is rice, salt and MSG”. Men’s FGD, Lao Ngam.

In Lao Ngam, one household reported feeding their child baby formula every day during the week prior to the fieldwork. On average, meats (mostly wild meat) were consumed by households 2.4 days per week. Fruit consumption was averaged 2.7 days per week.

In addition to food consumption, focus group participants were asked to rank food items they feel are lacking most during the year, along with the food item they would like to consume more of. In the six

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38 The survey question is focused on the distribution and concentration of recent cash expenditure on food items. Caution should be used here, the results do not relate to the frequency of purchases for each food item. The frequency of purchases will depend on the price and function of the food item. For example a small bag of salt can be bought for 5,000 kip which HHs may purchase every fortnight. Compared with sweets for 1,000 kip purchased once every few months as treats for children.
Lao Ngam focus groups, participants felt they were lacking meat in their diet (with 44 votes), followed by rice (39 votes), salt (22 votes), MSG (21 votes) and fish (16 votes).

When asked which food items they would like to eat more of, participants identified rice (with 46 votes), followed by meats (40 votes), MSG (28 votes), salt (26 votes) and equal last were fruits and chilli with 16 votes. It is concerning that participants identified salt and MSG as lacking in their diet, and that the consumption of these items is prioritized above more nutritious food items, such as fruit and vegetables. The low diversity in the staple diet of households is tied to participant’s lack of land, low rice yields and limited potential for income generation.

Figure 10 HH food items consumed in the past week, Lao Ngam District

5.4.2 Food is prioritised for children.

Adults and children aged 5-17 years in the sample households ate 2.9 meals per day on average. Children under 5 years of age ate 3.2 meals per day on average. For those households eating 2 meals a day there were adults in five households (9%); children (aged 6-17 years) in three households (5%) and children under 5 years old in two households (4%) (Table 1H appendix 4).

5.4.3 Inappropriate complementary feeding is undermining infant nutrition.

42 households (76%) reported having children under 5 years old. All households (n=54) that have children practiced breastfeeding. The average time for initiating food into an infant’s diet was about

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39 Infant feeding practices refer to age appropriate breastfeeding and introduction of food. At the time of the interview, 18 households (33%) were still currently breastfeeding their youngest child. The average duration of breastfeeding was reported to be 19.2 months or 1.7 years, with the shortest breastfeeding of infants being 5 months and longest is 4 years.
84.1 days or almost 3 months. This is an area of concern. Health practitioners recommend that infants commence solids no sooner than 6 months of age. The practice of combination feeding in Lao Ngam households is described by Ms. Sengchan:

“When children are born, I feed them rice on that day. I chewed the rice and grill it (Kao mok). I don’t have any money to buy cow’s milk for my children, I also give them breastmilk”. Ms. Sengchan, case study # 4, Lao Ngam

Over a third of households (38%, n=20) reported giving food to newborns within the first three days of life (Figure 1E appendix 4). The practice of inappropriate complementary feeding is a major concern. Efforts to address the issue will need to account for local levels of poverty, education and health literacy.

Ms. Sengchan provides a commonly used explanation for introducing food to babies before 6 months of age:

“I don’t feed my children breastmilk for a couple of days because there’s no breastmilk after birth. So I feed them rice until my breastmilk comes. When there’s breastmilk I throw away the first milk (colostrum) because it’s hot (from sleeping next to the fireplace), I’m afraid it’ll cause my children to be sick”. Ms. Sengchan, case study #4, Lao Ngam

Mothers lack an understanding about their own milk production and the benefits of breastmilk for newborn infants. Early introduction of food is also used to pacify infants, as demonstrated by this report from a man in a focus group:

“Newborns are fed breastmilk and rice by 3 days of age because the baby cries. The mother chews sticky rice then grills it in banana leaf (mok khao). The baby will eat mok khao until 3 months of age. From 3-6 months old the baby eats chewed rice. From 6 months babies eat plain sticky rice”. Men’s FGD, Lao Ngam

As the above quotes indicate, there is a lack of knowledge about infant hunger and feeding which leads to parents and caregivers feeding rice to manage crying. Another factor contributing to this behaviour is the need for men and women to produce food or work to meet household subsistence needs. This places pressure on postpartum women to return to work and leave their infants at home with caregivers.

At the time of the fieldwork, only one household reported exclusively breastfeeding the youngest child. Approximately 30% of the sampled households (n=16) reported introducing solid food to their youngest child until after the recommended 6 months. This is lower than the provincial rate, where 51.8% of mothers introduce food to infants after 6 months of age.\textsuperscript{40} Some caution should be used when interpreting these results. Following additional questions, it was found that infants were given sweets, baby formula or liquids before 6 months of age, which mothers did not consider to be ‘food’. In light of the lack of knowledge around infant feeding practices it is likely that the 30% of infants being exclusively breastfed up until 6 months is inaccurate.

\textsuperscript{40} WFP, Food and Nutrition Security Atlas of Lao PDR, 2013, p.70.
5.5 Health and Illness
The nutrition survey did not comprehensively investigate the disease, illness and sanitation profile of the sampled group. A small number of health measures were included based on the relationship between health, sanitation and nutrition outcomes. The results for Lao Ngam are summarised below.

5.5.1 Households drinking water and sanitation needs improving.
71% of sampled households (n=39) accessed drinking water from a protected source, such as from taps and/or underwater pumps. 16 households (39%) reported collecting drinking water from streams. These water sources were reported as being available all year round, with only four households stating that they experienced difficulties in accessing water at different times of the year.

The majority of the sample households (87%, n=48) did not treat their drinking water. Only 8 households (15%) reported boiling their water before drinking. The village water pump may provide convenient access. However, as Ms. Keo demonstrates, there is a lack of knowledge about treating water:

“We get our drinking water from the public pump. We don’t boil it, we just drink it directly. We don’t have time to boil water all the time”. Ms. Keo, case study # 6, Lao Ngam.

Water pumps provides households with convenient access to a protected water source for cleaning and drinking, Lao Ngam.

In Lao Ngam less than half of households (40%) raise animals and of this group, only 3 households (5%) pen their animals.

5.5.2 Access to latrines and diarrhoea management needs improving.
All sampled households defecate in the open. Although some households reported washing their hands after defecating (67%) before handling food (84%) before and after eating (88%), only 11 households (20%) said they used soap to wash their hands. In Lao Ngam, approximately 33 households (61%) had children who had diarrhoea in the past year. Of this group, 21 (64%) reported giving their children oral rehydration salts (ORS). These households were able to explain how to administer ORS correctly.
5.5.3 A quarter of households had someone who was ill and 9% of households had a person with a disability.

A quarter (25%, n=14) of the households surveyed reported that they had someone in their household who is currently ill. Of those, six people were described as ill due to a short term condition (<3 months). Five people were described as having long term health problems (>3 months). Of this group, six males were identified as being currently ill.

10 of the 55 households reported having at least one member in the household who had malaria in the previous 12 months. The most prevalent mode of prevention against Malaria was mosquito nets. All 55 households sampled reported using bed nets.

At the time of the survey, 9% of households (n=5) reported having one member with a disability. Of the five people identified, four were men and three of the four men were household heads. This reduces ability of men to work and provide for the family, while at the same time increases the responsibility of women to both take on additional labour and caring roles.

Households were also asked whether a household member had passed away in the last year; all three deaths were young males, two persons aged 3 months, and one person aged 3 years.

5.5.4 Pregnant women have limited access the district clinic for antenatal check-ups.

Of the 53 households with children, 24% (n=13) reported mothers receiving antenatal care for their youngest child. This is below the provincial average (47.8%) for mothers in Saravane. Most of this group 92% (n=12), received antenatal check-ups at the health centre and one mother attended the district hospital. The average number of visits for antenatal care was 2.6 times at the health centre.

5.5.5 Child immunization knowledge and access is limited in villages.

Of the 53 households with children, 31% (n=17) of households report their youngest child being fully immunized. This was difficult to verify as only 30% (n=16) of households with children were able to produce a yellow child growth and immunization card.

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41 Resulting from untreated illness, accidents, birth defects or mental illness.
42 The survey asked about family members who have a disability in order to better understand the potential nutrition needs of households as a whole unit. It does not examine individual nutrition status and needs, however FGDs in the endline evaluation may be able to identify the distribution of food within households where there is a person with a disability.
43 WFP, Food and nutrition security atlas for Lao PDR, 2013, p.69.
44 Of the 13 mothers that received antenatal care visits (ANC), about a third (31%, n=4) attended 4 or ANC visits. In Saravane province, 23% of mothers have four or more ANC visits during their pregnancy. Ibid.
6 DISCUSSIONS OF FINDINGS FROM SEPON AND LAO NGAM DISTRICTS

6.1 Household subsistence nutrition: characteristics and shared challenges

All households in Sepon and Lao Ngam reported experiencing rice shortages during the last season. In both districts, households produced an average of approximately 5.2 months of rice to eat from their harvest. In both districts, adults will prioritise rice for children to eat during times of rice shortage. Households report that children will eat rice three times a day on average, while adults will eat 2.6 times a day on average. 38% of adults in Sepon households eat twice a day, this is significantly higher than in Lao Ngam (9%) households.

Good practice and knowledge of feeding practices are critical in the nutrition status of children. Together with maternal nutrition (antenatal and post-partum mothers), nutrition during the first 1000 days of a child’s life (from conception to 23 months of age) is an important indicator for child wellbeing. Breastfeeding of infants was highly reported among mothers in the Sepon sample (92%) as well as in the Lao Ngam sample (100%). However, exclusive breastfeeding for the first six months of life, as is the international recommendation, is low with only 2% of households in Sepon and Lao Ngam ever breastfeed exclusively.

Appropriate complementary feeding of infants below the age of six months is alarmingly poor. Early introduction of rice to infants is 75% in Sepon households and 38% in Lao Ngam households. This poor feeding practice is driven by the high work load of women in household production. According to case study interviews and focus groups, there appears to be two drivers for this behaviour. First, the lack of labour for subsistence cultivation means women are compelled to return to work shortly after child birth. Secondly, traditional gender norms, particularly in Sepon, support and reinforce the uneven level of responsibility and burden placed on women.

The nutrition profile of households sampled for this baseline falls significantly below the international recommendations for dietary intake. The staple diet in households consists of rice, salt and MSG. Rice is consumed almost every day of the week, while salt and MSG is used every day by families in condiments and cooking. Vegetables, mostly grown or foraged are consumed on average 6 times a week, while forms of protein (fish and wild meat), are consumed on average 3 or less days a week by households. Households consume calcium 3-4 days a week through eating insects and small whole fish. Rice makes up a significant proportion of meals, usually eaten with small quantities of chilli and salt condiments and foraged vegetables. Food consumption patterns of households in this baseline are consistent with rural poor households in Laos who are vulnerable to malnutrition.

45 Participants identified that new mothers do not have time to recover after giving birth instead they return to work in the fields, forage for food and fuel and collect water sometimes within a week of delivery.
46 The minimum international recommended level of fats is 15% of daily intake; 10-15% of protein is recommended for daily intake; carbohydrates (including rice) is recommended at a minimum of 55% and maximum of 75% of daily intake. WFP, Food and Nutrition Security Atlas of Lao PDR 2013, p 30.
Households grow as much food as their labour allows. Households also rely on foraged food in nearby forests and vacant land to supplement their diet. From the perspective of nutrition, the household division of labour reflects the primary objective of securing minimum nutrition needs. Patterns of land use and resource extraction also illustrate household motivation to try to achieve subsistence nutrition for its members. Food and income derived from foraging provides an important source of nutrition and income to buy food. Household borrowing behaviour, specifically cash and rice debts, reinforce the pressures experienced by households in terms of household labour and dependency on land.

Sepon and Lao Ngam communities face the same health and sanitation challenges at the household and service levels. Outcome indicators for sanitation, maternal care and child immunisation are often proxies to measure nutrition related issues such as illness and disease that may interrupt nutrition and access to health services. Households in Sepon and Lao Ngam have high levels (above 95%) of open defecation, much higher than their province averages. The evaluation team also observed poor food hygiene in kitchens where food was left uncovered, dogs were allowed in the kitchen, soap was rarely used, and animals were not penned. Access to antenatal check-ups in both districts was below the provincial average and child immunisation is poorly monitored.

6.2 Poor health service system to support nutrition

6.2.1 District health service context in Sepon and Lao Ngam districts

In Sepon district, there are 14 district health centres, 13 are established and one is currently under construction. Staff from one health centre was interviewed for this baseline. District health staff are responsible for 19 villages in their catchment area. In Lao Ngam district there are eight health centres, six are operating and two are currently under construction. Each health centre is responsible for about 14 villages in their catchment area. Most health centres in both districts offer primary care services such as family planning, vaccinations, basic diagnosis and treatment. Some have facilities for natural child birth delivery, most do not have the capability to perform caesarean sections, minor invasive procedures or operations including intrauterine device (IUD) insertions. All maternal and child health

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48 Food items such as rice, vegetable and fruits are grown in the home garden, rice paddies or vacant land. Households also rely on foraged food in nearby forests and vacant land to supplement their diet.


50 For instance, children forage for food, wood and collecting water, post-partum mothers to work in fields and men engage in seasonal work on individual farms, construction sites and commercial farms.

51 Savannakhet province has 56.5% open defecation and Saravane province has 77.5% open defecation. WFP, Food and nutrition atlas of Lao PDR, 2013.

52 Health care staff at the district and provincial levels in KIs also identified the low levels of maternal and child monitoring in the target villages.
(MCH) related issues such as family planning options, delivery and vaccinations for MCH are provided free of charge.

6.2.2 Nutrition programs in villages

An integrated MCH outreach program implemented twice a year by district health staff provides basic nutrition promotion as part of the eight core activities including health, nutrition and sanitation promotion, growth monitoring, family planning, Ante Natal Care (ANC), vaccinations, family planning, deworming tablets and/or vitamins and primary health checks. However, these activities are dependent on funding from the central government and the interest of individual health staff to promote nutrition messages. According to one health centre staff member in Sepon:

“There’s no specific nutrition activity so it’s up to each health centre. We talk about nutrition with the community when we do outreach integration activities”. Health center staff, Sepon.

With the exception of the integrated MCH outreach visit, there are no nutrition specific activities being conducted at the village level. In terms of targeted interventions, a primary school feeding program is operating in Sepon and Lao Ngam primary schools, and the SuperKid (micronutrient powder) is distributed occasionally through an integrated outreach visit by clinic staff. The feeding program only reaches children who attend school. Those poorest households where children rarely attend school, but instead help their parents at home or in the fields, miss out on these free meals. School feeding programs also have no impact on the nutrition of under 5 years who are not eligible for school. It is recognised that one of the critical opportunities for improving child nutrition is within the first 1000 days. Findings from this baseline indicates that children under 5 years and primary age have poor nutrition and would benefit from a targeted nutrition program.

6.2.3 District health services have limited resources to address malnutrition and promote household nutrition.

District health personnel reported staff and resourcing shortages which limited their ability to collect information about nutrition in villages. Malnourished children are identified by health staff using a ‘visual check’ of children who look physically malnourished. Those, children are then measured during health outreach visits. District health staff from Sepon and Lao Ngam describe the diagnostic process:

“Normally the parents like us to measure every child but it takes a lot of time, so we need to select only those we think are abnormal [underweight], we can tell they’re malnourished just by looking at them”’. Health centre staff, Lao Ngam.

“We would visually scan them first, if we suspect they’re malnourished we measure them. If we find a malnourished child we record it and tell them to come see us so we can measure them using the upper arm measurement (MUAC) tapes”. Health centre staff, Sepon.

When malnourished children are identified, district health centres and hospitals cases are referred to a Provincial hospital for treatment. For instance: “When we find a malnourished child we refer to the provincial hospital…. we only have Super-kid at the district hospital so we can’t treat [malnutrition]”. District hospital staff, Lao Ngam.

6.2.4 Health staff need to improve knowledge of nutrition and malnutrition in villages.

There is a lack of understanding among health care staff about malnutrition in children. Often malnutrition is typically attributed to the parent’s lack of ‘time’, ‘effort’ or ‘willingness’ to feed children:
“It’s because the parents don’t really care about what they feed their child, they eat whatever they can find. Mostly they eat bamboo and chili sauce. Mothers don’t have time to look after their children because she’s always working in the rice fields. So children are left with the husband to feed and care, but the fathers don’t really look after the children very well”. Health centre staff, Sepon.

“The cause of malnutrition in children in Lao Ngam is mostly because of feeding practices. The parents don’t really make an effort with their children. Health staff and doctors advise them to use Super-kid, children are fed only once and sometimes the parents don’t have time to make them rice porridge or don’t have time to prepare food”. District hospital staff, Lao Ngam

These assumptions about poor parenting can limit and pre-determine how malnutrition is perceived by health care practitioners and this limits their understanding and therefore, how malnutrition should be addressed in these vulnerable communities.

6.3 Implications for the RLP project

The following discussion brings together key nutritional findings in this baseline with the RLP objective of improving livelihoods for rural poor households. The primary finding in this baseline is the extent to which households operate at the margins of subsistence. At these margins, households make difficult calculations where they trade off benefits and risks of existing and new livelihood strategies. This trade off in its most simple terms, is a calculation of household inputs (i.e. time and effort/labour) against household outputs in terms of income and production expressed as food (rice) or money.

The households participating in this baseline find themselves in a situation where any livelihood activity must be examined in terms of its ability to extend a family’s food security or, conversely for its potential to erode at subsistence nutrition. The following sections look at household capacity to meet subsistence targets for nutrition. The findings indicate that households living close to the subsistence margin are occupied with trying to secure basic nutrition. Households in Sepon and Lao Ngam report that when they fall below the subsistence margin (i.e. run out of rice to eat) they bridge the gap by working for money, rice and, or borrow money or rice. In this way households have a good understanding of the economics of nutrition as demonstrated by reports from participants who calculate the opportunity cost of livelihood activities in terms of time needed to secure enough food.

The household is a basic social and economic unit for livelihood activities and nutrition. The discussion below explores the interaction between livelihood activities and nutrition by examining three components. First, the dependency ratio is calculated to identify household resources and demands. Simply put: who needs to eat? Who can provide food? Is it enough? Secondly, the energy requirements for household members and thirdly, the potential productive resources within a household to secure basic nutrition.

6.3.1 Dependency ratio

The Dependency Ratio is the proportion of non-working people who are dependent on working-age people. The dependency ratio is useful for understanding the economic resources available to households. Using the dependency ratio, it is possible to analyse the supply and demand pressures

53 The dependency ratio provides a picture of household composition and insight into the balance of supply (productive persons) and demand for resources.

54 The higher the dependency ratio the more non-working people rely on fewer working-age to support them through income and labour. A high number of dependents, for prolonged periods, can affect a household’s ability to meet their nutrition needs and to withstand and cope with ‘shocks’.
that households face in their provisioning activities. This analysis provides an alternative perspective for understanding how a project such as the RLP interacts with existing livelihood activities.

The Sepon and Lao Ngam households sampled for this baseline have high dependency ratios. In Sepon, 52% of people are under 15 years of age and 2% are over 65 years (Figure 11). This translates as 54% of the population being ‘dependent’ on the remaining 45% who are of ‘working age’. In Lao Ngam, the proportion of ‘dependents’ to a ‘working age’ person is 59% and 41% respectively (Figure 12).

On these percentages the dependency ratios work out as follows. For Sepon, the Dependency Ratio is 122:100. This means that 10 working age people are supporting approximately 12.2 non-working age people, in addition to themselves. For Lao Ngam, the Dependency Ratio is 142:100. This means that in addition to themselves, 10 working age people are supporting 14.2 non-working age people.

6.3.2 Household minimum daily energy needs

To understand the relationship between household compositions, the dependency ratio and subsistence nutrition, the minimum household energy needs should be determined. A rough estimate can be calculated by establishing the minimum energy required for each member in the household in daily calorie terms. An average household in Sepon with 5.9 members will be used to illustrate the relationship between nutrition, livelihood outcomes and household composition. This type of analysis can provide useful insights for understanding the internal capacity and resource constraints faced by a household when weighing up potential livelihood opportunities.

In this household example, two adults are supporting themselves plus four children to meet their minimum energy needs (Table 3). In this household, a productive adult will need to support 2 dependents and themselves. Child 1 is the ultimate dependent, who needs others to feed and care

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55 This approach can also be used with the average Lao Ngam household size of 5.2 members, made up of two adults and three children using the minimum energy requirements in Table 3.

56 This assumes the two adults are productive and four children are dependents. The dependency ration for this household composition is 203:100.
for them. This individual cannot contribute to other people’s energy needs. The minimum energy need for an average Sepon household of 5.9 people and is listed in Table 3.\textsuperscript{57}

Table 3 Average household minimum daily energy requirement

<table>
<thead>
<tr>
<th>Persons</th>
<th>Approximate minimum kilocalories per day</th>
<th>Persons</th>
<th>Approximate minimum kilocalories per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Adult (working)</td>
<td>2,307</td>
<td>(4) Child 2 (school aged)</td>
<td>1,881</td>
</tr>
<tr>
<td>(2) Adult (pregnant or lactating)</td>
<td>2,500</td>
<td>(5) Child 3 (school aged)</td>
<td>1,881</td>
</tr>
<tr>
<td>(3) Child 1 (under 5 yrs)</td>
<td>1,064</td>
<td>(6) Child 4 (15 yrs)</td>
<td>1,881</td>
</tr>
<tr>
<td>HH Daily Total</td>
<td></td>
<td></td>
<td>11,514</td>
</tr>
</tbody>
</table>

6.3.3 The cost of household minimum energy needs

The cost of energy needs for a household of this size is developed using three essential food items from the local diet: rice, vegetable oil and fresh fish. These items represent the body’s requirement for complex carbohydrates, fats and protein.\textsuperscript{58} To meet the 11,514 calories required by the household each day, essential food items that will contribute to meeting this calorie need should be established. The essential food items and their recommended daily intake requirement is outlined in Figure 13.

Figure 13. Household (5.9 persons) minimum daily intake requirement

Food items, min. daily energy requirements

Source: Ministry of Health, Government of Malaysia. Minimum daily energy requirements for food items consume by persons performing agricultural activities.

\textsuperscript{57} Ministry of Health, Malaysia Government recommendations for Minimum Daily Energy Requirement for persons performing agricultural activities. Data is based on UN, WHO and Food and Agricultural Organisation MDER recommendations.

\textsuperscript{58} Carbohydrates can also be separated into vegetables and starched based groups.
Based on this household energy requirement expressed in calories, it is then necessary to translate this into quantities of food required in order to reach the energy target. When the daily household calories derived from food items are converted in kilograms, the average Sepon household will require each day:

- Paddy rice: 4.6kg
- Vegetable oil: 0.13kg
- Fresh fish: 0.20kg

Once the quantity of food is determined, local market prices (in LAK and USD$) are used to give a monetary cost for meeting energy needs in a day, month, or for a year (Tables 4 and 5).

**Table 4 Food items, cost per day in LAK and USD**

<table>
<thead>
<tr>
<th>Food Item</th>
<th>LAK</th>
<th>USD $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy rice</td>
<td>23,000</td>
<td>2.88</td>
</tr>
<tr>
<td>Vegetable oil</td>
<td>2,250</td>
<td>0.29</td>
</tr>
<tr>
<td>Fresh fish</td>
<td>12,500</td>
<td>1.56</td>
</tr>
<tr>
<td><strong>Daily total</strong></td>
<td><strong>37,750</strong></td>
<td><strong>4.70</strong></td>
</tr>
</tbody>
</table>

**Table 5 Household minimum energy requirement and costs**

<table>
<thead>
<tr>
<th>Food Items</th>
<th>Month Calories</th>
<th>Month Qty (Kg)</th>
<th>Month/ LAK</th>
<th>Month/ USD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice (88% Dietary Energy)</td>
<td>303,960</td>
<td>138</td>
<td>699,583</td>
<td>87</td>
</tr>
<tr>
<td>Vegetable Oil (10.3%)</td>
<td>35,580</td>
<td>3.9</td>
<td>59,312</td>
<td>7.41</td>
</tr>
<tr>
<td>Fresh Fish (1.7%)</td>
<td>5,520</td>
<td>6</td>
<td>152,083</td>
<td>19</td>
</tr>
<tr>
<td><strong>Monthly Total</strong></td>
<td><strong>345,060</strong></td>
<td><strong>147.9</strong></td>
<td><strong>910,979 LAK</strong></td>
<td><strong>$113.4</strong></td>
</tr>
<tr>
<td><strong>Annual Total</strong></td>
<td><strong>4,140,720</strong></td>
<td><strong>1,774.8</strong></td>
<td><strong>10,931,748 LAK</strong></td>
<td><strong>$1,360.9</strong></td>
</tr>
</tbody>
</table>

For an average Sepon household:

- 147.9kg of rice is needed per month to meet energy demands.
- The total value of the three essential food items for one month is 910,979 LAK or USD$113.40.

Currently, Sepon households are producing on average 2/3 of the annual rice requirement to meet minimum energy needs. This shows that households are not achieving their basic energy needs in rice terms.

The tension between available labour and total monthly energy needs can be demonstrated by calculating how many days (expressed in wages) are required to reach household calorie target (expressed in monetary terms). Three scenarios are used to show the impact of labour supply on the household.

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59 The average energy each food item is as follows: Rice (cal/kg)= 3,700; vegetable oil (cal/kg)= 8,820 and fresh fish (cal/kg)= 930.
60 After milling, paddy rice will produce approximately 50-60% of edible rice. This quantity will provide a household with 2.7kg of rice for 6 people per day.
61 An estimated market value based on local reports: paddy rice kip/kg= 5,000; vegetable kip/kg= 15,000 and fresh fish kip/kg= 25,000.
62 USD$1 = 8,000 LAK, September 2015 foreign exchange rate.
63 Based on FAO and WHO recommendations for Dietary Energy.
household subsistence nutrition (Table 6). The scenarios below assume a monthly energy target valued at 910,979 LAK and a daily wage valued at 30,000 kip for each productive person.64

Table 6. HH labour requirement to meet subsistence nutrition scenarios.

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>In this scenario 2 productive units (working age persons) would need to work 15 days in a month to provide the minimum required nutrition needs for the family. This can be a combination of wage labour, own production or foraged foods.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two productive persons reach the monthly energy target in 15 productive days.</td>
<td>If the household energy needs are met through growing food or foraged food it will need to be adequate in quantity (see monthly/ kg in Table 5). If production or foraging time is traded in for wage work, the quantity of food items will need to be equivalent to the LAK/$ value to purchase at market. There are 16 days left in the month to care, learn, collect water and fuel, clean, rest and participate in community activities or training.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2</th>
<th>This scenario 1 productive unit (adult) would need to work 31 days in a month. This can be a combination of wage labour, own production or foraged foods.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 productive person reaches the monthly energy target in 31 productive days.</td>
<td>If energy needs are met through growing food or foraged food it will need to be adequate in quantities (KG). If household production or foraging is traded in for wage work the quantity of food items will need to be equivalent to the LAK/$ value to purchase at market. In this scenario, there is no time left to do other activities that support nutrition and livelihoods.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 3</th>
<th>In this scenario 1.5 productive units (working male and female working half time) will need to work 20 days in a month. This can be a combination of wage labour, own production or foraged foods.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 working persons reach the monthly energy target in 20 productive days.</td>
<td>If energy needs are met through their own production or foraging it will need to be adequate in quantities (KG). If production or foraging time is traded in for wage work the quantity of food items will need to be equivalent to the LAK/$ value to purchase at market. This leaves 11 days in a month to care, clean, rest, collect water and fuel, learn and participate in community life, training or meetings.</td>
</tr>
</tbody>
</table>

The scenarios provide another way to demonstrate the tension between available labour to secure food and household monthly energy needs. It also illustrates the time people have left to do other activities, like income generation, asset maintenance and activities that support nutrition. The above

64 The daily wage of 30,000 kip is an average based reports by participants in this baseline and is used here as an estimate only. For a comprehensive modelling of scenarios, wages will need to be accurate for men and women.
three scenarios are estimates only and are used here to show the impact of household labour supply on food security outcomes for families. This type of analysis has potential useful application in program designs for a convergence or integrated approach.

In summary, an economic analysis of nutrition can provide a framework for understanding the time demands that households face in securing their basic nutrition needs. This type of analysis should be used to determine whether given inputs, the value of assets, and time requirements, such a project will either enhance or diminish household subsistence nutrition. While every livelihood project would expect to make a positive contribution to households, there is a risk that project activities can draw on productive labour time and detract from the household’s ability to meet its nutrition needs through wage labour, own production or foraging. Naturally, these risks should be avoided at all costs.

With these challenges in mind, the endline evaluation will focus on identifying change factors in the following key areas:

1. Expenditure by food items (LAK)
2. Number of HHs purchasing food items
3. Consumption of food items per week
4. Household aspiration for food
5. Increase/ decrease in rice shortages
6. HH food sources
7. HH debt/ borrowing behaviour
8. Outcome of RLP assets
9. Burden on women or children (time and labour) in managing the asset
10. Impact of assets on
11. HH use of land
7 LESSONS FOR A LIVELIHOOD PROJECT

The baseline findings provide important lessons for livelihood projects aimed at poor households in rural areas. Recommendations relating to program design would be premature and should be reserved until the final endline findings are established. This last section of the report draws attention to issues that might be of relevance for projects operating under similar circumstances.

First, livelihood projects should focus more acutely on the relationship between income generating activities and household nutritional value. As data from the case study interviews and focus groups indicate, household subsistence nutrition, including dietary intake, is extremely poor. Without a clear understanding of the way livelihood activities interact with household nutrition, projects may, at best, produce little or no change in nutrition status and behaviours. At worse, a project may adversely impact household nutrition by stretching or re-directing the household’s productive labour, time, assets and resources.

Secondly, livelihood projects should take into account the causes of malnutrition in each district. This includes a solid understanding of women’s roles in household production and caring for others. During the design phase, a project should engage directly with communities to identify the causes of malnutrition and to collaborate with development agencies in designing solutions to tackle nutritional issues. The Linking Agriculture, Natural resource management and Nutrition (LANN) approach is one project that allows for the integration of livelihood activities, gender and nutrition.

Thirdly, nutrition is closely tied to food security. The social and physical environment plays a major role in determining health and nutritional outcomes. Frequent and reoccurring illness and disease have a direct impact on a child’s physical and cognitive development. Incidents of illness and disease in a community heighten the demand for caregivers and further tax a household’s ability to deploy labour for securing food for the family. Integrating messages from Early Childhood Development, positive parenting, water and sanitation promotions in addition to Infant and Child Feeding cooking demonstrations would offer a more holistic approach towards improving nutrition.
Appendix 3 Data collection and analysis

Table 1A. Sample groups and size

<table>
<thead>
<tr>
<th>Tools</th>
<th>Sample Groups</th>
<th>Sepon District</th>
<th>Lao Ngam district</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH Survey</td>
<td>55 Households (women and men), RLP beneficiaries</td>
<td>55 households</td>
<td>55 households</td>
</tr>
<tr>
<td>Focus Group Discussions</td>
<td>Female beneficiaries of RLP project</td>
<td>3 women’s FGD (n=32)</td>
<td>3 women FGD (n=30)</td>
</tr>
<tr>
<td></td>
<td>Males in households participating in RLP project</td>
<td>3 men’s FGD (n=30)</td>
<td>3 men FGD (n=30)</td>
</tr>
<tr>
<td>Key Informant Interview</td>
<td>District Health Office staff</td>
<td>n= 1</td>
<td>n= 1</td>
</tr>
<tr>
<td></td>
<td>Health Centre staff</td>
<td>n= 3</td>
<td>n= 4</td>
</tr>
<tr>
<td></td>
<td>District Hospital staff</td>
<td>n= 0</td>
<td>n= 1</td>
</tr>
<tr>
<td>Case Study Interviews</td>
<td>Case types: A. Widowed or female headed household with young children;</td>
<td>n= 3</td>
<td>n= 3</td>
</tr>
<tr>
<td></td>
<td>B. Landless household with children;</td>
<td>Case types: A; C; D</td>
<td>Case types: A; B; C</td>
</tr>
<tr>
<td></td>
<td>C. Household with many dependents (children under 5 yrs and/or elderly); or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. A single female household.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1B. Data collection schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Sepon Village</th>
<th>Date</th>
<th>Lao Ngam village</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8/2015</td>
<td>Trained translators</td>
<td>10/8/2015</td>
<td>KII with DHH, DHO and health centre</td>
</tr>
<tr>
<td>4/8/2015</td>
<td>Xoung and Nongniew village</td>
<td>11/8/2015</td>
<td>Kebpeung village</td>
</tr>
<tr>
<td>6/8/2015</td>
<td>Ahore village and KII Health centre</td>
<td>13/8/2015</td>
<td>Santong village</td>
</tr>
</tbody>
</table>
Table 1C. Steps in data analysis

<table>
<thead>
<tr>
<th>Quantitative (survey) data analysis procedures</th>
<th>Analytical Procedural Steps</th>
<th>Qualitative (FGDs, KII, Case Study) data analysis procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Code data with numeric values.</td>
<td>Preparation of data for analysis</td>
<td>• Organised documents and visual data.</td>
</tr>
<tr>
<td>• Input data for analysis into Excel.</td>
<td></td>
<td>• Transcribe text.</td>
</tr>
<tr>
<td>• Clean the data.</td>
<td></td>
<td>• Input data into Word files.</td>
</tr>
<tr>
<td>• Conduct a descriptive analysis.</td>
<td>Explore the data</td>
<td>• Read through the data.</td>
</tr>
<tr>
<td>• Check for distributions (range and mean).</td>
<td></td>
<td>• Develop qualitative codes.</td>
</tr>
<tr>
<td>• Interpret the data to describe the</td>
<td>Analyse the data</td>
<td>• Group codes into themes for FGDs, KIIs and case studies.</td>
</tr>
<tr>
<td>characteristics of current conditions of HHs.</td>
<td></td>
<td>• Interrelate themes between FGDs, KIIs and case studies.</td>
</tr>
<tr>
<td>• Cross check data and relationship</td>
<td>Represent the data analysis</td>
<td>• Represent findings in discussions of themes.</td>
</tr>
<tr>
<td>between variables.</td>
<td></td>
<td>• Explain and compare the results within qualitative</td>
</tr>
<tr>
<td>• Represent results in statements and</td>
<td>Interpret results</td>
<td>datasets.</td>
</tr>
<tr>
<td>provide results in tables and figures.</td>
<td></td>
<td>• Explain and compare the results with survey datasets.</td>
</tr>
<tr>
<td>• Explain and compare the results with survey</td>
<td>Merge two sets of results:</td>
<td></td>
</tr>
<tr>
<td>datasets.</td>
<td>• Identify areas of comparison, consistency, contrast and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>synthesised results from surveys and qualitative datasets.</td>
</tr>
<tr>
<td></td>
<td>• Identify differences and investigate explanation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Summarised and interpret the separate results.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Produce a conclusion of the synthesised findings</td>
<td></td>
</tr>
</tbody>
</table>

Appendix 4 Results tables and figures for Sepon and Lao Ngam districts

Tables and figures for households in Sepon district

Table 1D. Age groups, Sepon District

<table>
<thead>
<tr>
<th>Age Groups, Sepon District</th>
<th>Age</th>
<th># Males</th>
<th>%</th>
<th># Females</th>
<th>%</th>
<th>Total</th>
<th>%</th>
<th>Acc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-23 months</td>
<td>12</td>
<td>4%</td>
<td></td>
<td>9</td>
<td>3%</td>
<td>21</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>2-5 year olds</td>
<td>28</td>
<td>9%</td>
<td></td>
<td>24</td>
<td>7%</td>
<td>52</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>6-14 year olds</td>
<td>53</td>
<td>16%</td>
<td></td>
<td>44</td>
<td>14%</td>
<td>97</td>
<td>30%</td>
<td>52%</td>
</tr>
<tr>
<td>15-45 year olds</td>
<td>64</td>
<td>20%</td>
<td></td>
<td>63</td>
<td>19%</td>
<td>127</td>
<td>39%</td>
<td>92%</td>
</tr>
<tr>
<td>46-64 year olds</td>
<td>12</td>
<td>4%</td>
<td></td>
<td>7</td>
<td>2%</td>
<td>19</td>
<td>6%</td>
<td>98%</td>
</tr>
<tr>
<td>65+ year olds</td>
<td>5</td>
<td>2%</td>
<td></td>
<td>3</td>
<td>1%</td>
<td>8</td>
<td>2%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>174</td>
<td>54%</td>
<td></td>
<td>150</td>
<td>46%</td>
<td>324</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Table 1E. Average number of times adults and children eat a day

<table>
<thead>
<tr>
<th></th>
<th>Average # times food is eaten per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>2.6</td>
</tr>
<tr>
<td>Children 6-17 years</td>
<td>3</td>
</tr>
<tr>
<td>Children &lt; 5 years</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: HH survey, n=55 Sepon District

Table 1F. Number and % of households eating two meals per day.

<table>
<thead>
<tr>
<th></th>
<th># HH</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>21</td>
<td>38%</td>
</tr>
<tr>
<td>Children 6-17 years</td>
<td>9</td>
<td>16%</td>
</tr>
<tr>
<td>Children &lt; 5 years</td>
<td>5</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: HH survey, n= 55 Sepon District
Tables and figures for households in Lao Ngam district

Table 1G. Age groups, Lao Ngam District

<table>
<thead>
<tr>
<th>Age</th>
<th># Male</th>
<th>%</th>
<th># Female</th>
<th>%</th>
<th>Total</th>
<th>%</th>
<th>Acc. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-23 months</td>
<td>9</td>
<td>3%</td>
<td>7</td>
<td>2%</td>
<td>16</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>2-5 year olds</td>
<td>41</td>
<td>14%</td>
<td>17</td>
<td>6%</td>
<td>58</td>
<td>20%</td>
<td>26%</td>
</tr>
<tr>
<td>6-14 year olds</td>
<td>49</td>
<td>17%</td>
<td>42</td>
<td>15%</td>
<td>91</td>
<td>32%</td>
<td>58%</td>
</tr>
<tr>
<td>15-45 year olds</td>
<td>45</td>
<td>16%</td>
<td>56</td>
<td>20%</td>
<td>101</td>
<td>35%</td>
<td>93%</td>
</tr>
<tr>
<td>46-64 year olds</td>
<td>9</td>
<td>3%</td>
<td>8</td>
<td>3%</td>
<td>17</td>
<td>6%</td>
<td>99%</td>
</tr>
<tr>
<td>65+ year olds</td>
<td>1</td>
<td>0.5%</td>
<td>1</td>
<td>0.5%</td>
<td>2</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>154</td>
<td>54%</td>
<td>131</td>
<td>46%</td>
<td>285</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: HH survey, n= 55 Lao Ngam District

Figure 1D. Number of months HH have rice to eat, Lao Ngam District

Source: HH survey, n= 55 Lao Ngam District

Figure 1E. Introduction of food to infants, Lao Ngam District

Source: HH survey, n= 54 Lao Ngam District

Figure 1F HH reasons for borrowing cash, Lao Ngam District

Source: HH survey, n= 55 Lao Ngam District
Table 1H. Average meals eaten by age group, Lao Ngam

<table>
<thead>
<tr>
<th>Number of meals eaten in HHs per day</th>
<th>Average</th>
<th>HHs eating 2 meals a day</th>
<th># HH</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>2.91</td>
<td>Adults</td>
<td>5</td>
<td>9%</td>
</tr>
<tr>
<td>Children 6-17 years</td>
<td>2.93</td>
<td>Children 6-17 years</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Children &lt; 5 years</td>
<td>3.2</td>
<td>Children &lt; 5 years</td>
<td>2</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: HH survey, n=55, Lao Ngam