

# Interventions to foster the production, supply and consumption of “Future Smart Foods”

February 2026

Nutrition  
Sensitive Agro Ecology (NSAE)

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The Knowledge and Research for Nutrition project of the European Commission (2020-2026) aims to provide improved knowledge and evidence for policy and programme design, management and monitoring & evaluation in order to reach better nutrition outcomes.

The project is implemented by Agrinatura - the European Alliance on Agricultural Knowledge for Development – which has established a Nutrition Research Facility, pooling expertise from European academia and having the ability to mobilise internationally renowned scientific networks and research organisations from partner countries.

The Nutrition Research Facility provides expert advice to the European Commission and to the European Union (EU) Member States and Partner Countries.

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## List of acronyms

Acronym	Description
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement
DAFO	District Agriculture and Forestry Office
FSF	Future Smart Foods
MAD	Minimum Acceptable Diet
MDD-W	Minimum Dietary Diversity for Women
NAFRI	National Agriculture and Forestry Research Institute
NSAE	Nutrition Sensitive Agro Ecology
NRF	Nutrition Research Facility
PAFO	Provincial Agriculture and Forestry Office
VHV	Village Health Volunteer

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## Executive summary

In Xiengkhouang province, in the north of the Lao PDR, the dietary diversity of women and children is insufficient to cover their micronutrient needs. For these rural households who depend on agriculture for their livelihoods, agroecology can be an effective solution for sustainably improving dietary diversity and nutritional outcomes. Beyond agricultural pathways such as crop diversity, synergies, or reduction of chemical inputs, agroecological principles related to forest management, market linkages or equity and gender may be relevant ways for agroecological interventions to influence nutrition.

The research study on nutrition-sensitive agroecology (NSAE) aims to identify effective ways to improve dietary diversity through the adoption of agroecological practices in the Lao PDR. The NSAE project was designed using a participatory and evidence-based approach in two villages of Xiengkhouang province. The methodology combined cross-sectional household surveys with participatory action research, including the use of the Photovoice approach to capture community perspectives. Household surveys were conducted during both the rainy and dry seasons to identify seasonal constraints, needs, and vulnerabilities affecting food production, access, and consumption. These data were complemented by qualitative surveys, which helped communities identify key obstacles and opportunities across local food systems, from production and supply to consumption. The Photovoice approach enabled communities to document their socio-economic, financial, and environmental challenges while empowering community members (women and men alike) to articulate priorities and propose locally grounded solutions. Together, these findings formed the evidence base for the co-design of NSAE interventions, ensuring relevance, ownership, and feasibility.

This report first presents the methodology used to design the interventions. It then describes the interventions that were implemented to overcome the barriers to the production, supply and consumption of these foods in the two villages. Finally, the report summarises the data collected on the impact pathways of the interventions and assesses the conditions for successful interventions, aiming at contributing to the design and implementation of more effective nutrition programmes based on agroecology in Lao PDR.

The priority intervention areas that have been identified are:

- nutrition awareness and behaviour change, particularly for young children;
- development of simple, locally appropriate food recipes for infants and young children;
- capacity building for village and district health workers, including equipment and training of the health volunteers on nutrition monitoring and basic recommendations;
- agronomic training and agroecological experimentation to improve production diversity;
- improved water management for household food production;
- farmer-to-farmer exchanges and study tours to support knowledge transfer;
- food processing, storage, and collective purchasing of healthy foods to improve the availability, accessibility, and affordability of nutritious foods at village level.

The impact of the interventions on dietary diversity could obviously not be measured given the very short duration of the study (less than two years). However, this report will serve to understand "how" potential effects on outcomes, such as diet diversity, are produced. The results of the study provide evidence that combining various interventions based on agroecological principles, including water access, diversified food production, nutrition education, community health services, and food access mechanisms, leads to measurable improvements in knowledge, practices, and early behavioural change, even within a short timeframe. Interventions reinforced each other: for instance, improved water access enabled home gardening; seed distribution increased food availability; nutrition education and cooking workshops have raised awareness about healthier child feeding practices. In addition, the research study shows that participatory approach drives ownership and uptake: community-designed posters and videos proved effective in shifting perceptions (particularly around the need to diversify the diet and the risks of ultra-processed foods for young children) and encouraged peer-to-peer learning.

## 1. Context, objectives and methodology

### 1.1 Background

In the Lao PDR, the dietary diversity of women and children is insufficient to meet their micronutrient needs (Ministry of Health and Lao Statistics Bureau, 2016). Daily diets are mainly based on the consumption of rice eaten with leafy vegetables, vegetables and flesh foods (Ministry of Health and Lao Statistics Bureau, 2016). In Xiengkhouang Province, where the NSAE study is being conducted, only 22.5% of women aged 15-49 years reached the Minimum Dietary Diversity (MDD-W) in 2017, compared with 32% nationally, and the Minimum Acceptable Diet (MAD) in children 6-23 months was 31% (Lao Statistics Bureau, 2018).

Through a mixed method combining scientific evidence and participatory approaches (see NRF-NSAE Deliverable 3 - Report on the identification and characterisation of Agroecological “Future Smart Foods” in Lao PDR), the initial stages of the NSAE study aimed to identify Future Smart foods (FSF) capable of improving the dietary diversity of women and children of two villages in Xiengkhouang province and to characterise the obstacles to their consumption, production, and supply. FSF are defined by Li and Siddique (2020) as a variety of neglected and underutilised species which are cultivated or wild, nutrient-dense, locally available, climate resilient, affordable, culturally appropriate, safe.

According to the methodology of the NSAE research study (see NRF-NSAE Deliverable 1 – Inception report), these first stages of the NSAE research study have to be followed by applied research activities aiming to identify, design and test interventions to overcome the obstacles of production, supply and consumption of more FSF in the model villages, and then to assess the conditions for successful interventions through an impact pathways evaluation process. These stages are described and analysed in this report.

### 1.2 Objective of the report

The main objective of the NSAE research study is to analyse how agroecological practices can improve the dietary diversity for women and children in farming households in the Lao PDR. This report focuses on the identification, design, test and evaluation of interventions aiming to overcome the obstacles of production, supply and consumption of more Future Smart Foods (FSF) in the two target villages of NSAE project.

The specific objectives are:

1. to report on the methods used to select the interventions;
2. to describe the interventions and the main challenges regarding their implementation, and;
3. to assess the impact pathways of the interventions.

### 1.3 Assumptions

Following the diagnosis done during the inception phase (see inception report), our main hypothesis is that carefully-designed and context-specific interventions, co-designed by local actors (farmers, consumers, traders, local sellers...) and based on agroecological principles, are appropriated and contribute to improve the production, supply and consumption of these FSF and, therefore, dietary diversity in target populations.

## 2. Main findings

### 2.1 Identification and selection of interventions

Based on the diagnosis of obstacles of production, supply and consumption of FSF done during the previous steps of the study (see Deliverable 3), three participatory workshops have been organised in Ban Na village and in two clusters of Ban Pouseo village (Naseo and Buaknam) to identify and design the possible interventions that could address these obstacles.

Each participatory workshop was divided into three parts:

- i. Photo exhibition on food challenges, based on Photovoice methodology (see Deliverable 3);
- ii. Presentation, selection and clustering of the main food-related issues (from the results of the quantitative and qualitative surveys);
- iii. Working groups to suggest solutions to address the main food-related issues.

### 2.1.1. Photo exhibition on food challenges

As a reminder, the NSAE research team used the Photovoice method to identify the food challenges faced by target populations: the participants used photography to represent their daily food challenges and expressed them through discussions around the photos.

The photographs were exhibited in each village, and the participants were able to explain their photos and get some feedback from the audience (Figure 1). The exhibition had several benefits: it aroused a great deal of curiosity and interest among all the participants who took part in the workshops. It also “broke the ice” and sparked some very interesting discussions about community food challenges.

**Figure 1. Photovoice exhibition<sup>1</sup>**



### 2.1.2. Presentation, selection and clustering of the main food issues

Some results from the quantitative survey relating to the dietary diversity of women and children were translated into Lao PDR and adapted into easily understandable formats, such as posters, and presented to the participants (see Annex 1). Participants were able to provide feedback on the posters, whether to clarify issues or to better understand the practical implications of the lack of dietary diversity in the two villages.

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<sup>1</sup>All individuals who participated in the study, including those photographed in this report, signed a consent form. When the person on the images is younger than 18, the form has been signed by his/ her legal representative.

Three working groups focusing respectively on production, supply and consumption discussed the main food issues that were highlighted during the previous investigations:

1/ Working group on obstacles to FSF production: the main issue is the limited quantity and diversity of fruits, vegetables and other crops produced by the farmers (targeting the food groups that are lacking in the current diet). The obstacles to production identified by participants are:

- Severe weather variations, frost and climate change;
- Lack of water;
- Limited agronomic techniques to prevent pests and diseases for vegetables and fruit trees;
- Low productivity of fruit trees;
- Seasonal production of fruits and vegetables.

2/ Working group on obstacles to FSF consumption: issues of caring and feeding families and children have to be addressed with suitable solutions. The main obstacles related to these issues have been listed on the table:

- Lack of health nutritional monitoring and health advice;
- “Hidden hunger”: no awareness on nutritional issues;
- Lack of knowledge and transmission of misconceptions about children feeding;
- Competition for women’s time to manage the diet, care for children, and agricultural working activities, which are time-consuming.

3/ Working group on obstacles to FSF supply: limited access to the foods that are targeted. The main obstacles to supply these foods have been discussed and reported on the table:

- Lack of healthy food (in particular fruits and vegetables) in village shops;
- Lack of knowledge and equipment to process and store food;
- Long distance to the market;
- Roads become impassable during the rainy season;
- Food inflation, high cost of healthy food, lack of financial means.

After the presentation, the food issues were adjusted, reformulated and collectively validated. Some issues that were identified but could not be addressed with the project's resources (budget, project duration, skills, etc.) have been abandoned, such as the unexploded ordnances (UXO) in the forest or the improvement of the road conditions.

### 2.1.3. Participatory identification of interventions

The next phase of the participatory process consisted in discussing the solutions to address each issue, the means to implement these solutions and the implementation timeline. Working groups were organised to identify possible interventions as well as information on the operationalisation and implementation of these interventions. All the information was recorded in tables (see annex 2). The working group on production-related interventions has addressed fruit production and vegetable and other crop production (beans, nuts, etc.) separately.

Then, during a plenary session, all the interventions were summarised and discussed to validate the expectations and to have an agreement on the commitments of each party involved: the NSAE team, the Provincial Agriculture and Forestry Office (PAFO) and the families involved in the project, in terms of time investment, expertise, financial means.

The roadmaps on the intervention were reported on tables (Figure 2), translated into Lao PDR, and displayed in each village/cluster.

**Figure 2. Roadmap on the interventions in the target areas**

**Ban Na village**

Intervention	Actions / steps	Input, resource	Timetable
Nutrition awareness	Poster and videos on nutrition recommendations	Posters	March
Recipes for kids	Cooking workshop (infant meals and formulas), videos and recipe book	Food, cooking material	March
Nutrition referents	Relaying information, malnutrition detection	Leaflet, scale, balance, training	March
Training	Training on pest and diseases management on fruits trees	Leaflets, training	Season with more diseases (Aug-Oct)
Experiments	Demo Plot(s): Intercropping chestnut trees + soybean	Training, seeds	July
Water management	Set up a water tank to increase water supply for domestic use and vegetables	Water storage and distribution system	March
Study tour	Farmer to farmer exchanges	Visits organisation	April
Processed food	Equipment, Assessment of training needs	Materials, training	May
Village purchase group	Decide about roles, rules, regulations, set the calendar	Meeting, subsidies for 1 <sup>st</sup> purchases	May

**Pouseo village, Buaknam cluster**

Intervention	Actions / steps	Input, resource	Timetable
Nutrition awareness	Poster and videos on nutrition recommendations	Posters	March
Recipes for kids	Cooking workshop (infant meals and formulas), videos and recipe book	Food, cooking material	March
Nutrition referents	Relaying information, malnutrition detection	Leaflet, scale, balance, training	March
Kindergarten	Feasibility study and trial for setting up a kindergarten	Interviews province Officers	March
Training	Training on pest and diseases management (fruits trees)	Leaflets, training	Season with more diseases (Aug-Oct)
Experiments	Permaculture demo plots using the water tanks	Training, seeds	After water tanks
Water management	Explore and implement the best option to improve the access to water	Water storage and distribution system	March
Study tour	Farmer to farmer exchanges	Visits organisation	April
Process food	Equipment, Assessment of training needs	Materials, training	May
Introduce foods in the shop	Evaluation of availability, Discussion with shop owners	Subsidy first purchases	May

## Pouseo village, Naseo cluster

Intervention	Actions / steps	Input, resource	Timetable
Nutrition awareness	Poster and videos on nutrition recommendations	Posters	March
Recipes for kids	Cooking workshop (infant meals and formulas), videos and recipe book	Food, cooking material	March
Nutrition referents	Relaying information, malnutrition detection	Leaflet, scale, balance, training	March
Training	Training on pest and diseases management (fruits trees, banana)	Lao specialist, leaflets, training	Season with more diseases (Aug-Oct)
Experiments	Demo plots with fruit trees	Training, seeds	July
Water management	Implement the best option to improve the access to water	Water storage and distribution system	March
Study tour	Farmer to farmer exchanges	Visits organisation	April
Process and store food	Equipment, Assessment of training needs	Materials, training	May
Introduce new foods in the shop	Evaluation of availability, discussions with shop owners	Subsidy first purchases	May

## 2.2 Interventions implemented to improve dietary diversity

### 2.2.1. Interventions on food at production level

#### *Improvement of the water distribution system for agriculture and sanitation*

With the support of PAFO and District Agriculture and Forestry Office (DAFO), access to clean water was improved to benefit both water supply for house gardens and hygiene and sanitation for households and communities. The project teams provided technical assistance for the design and management of the water supply system, connecting mountain spring water to the village and ensuring irrigation for crops in the gardens (Figure 3).

In Ban Na village, the intervention doubled the capacity of the village reservoir, providing enough water for food crops during the dry season. In Pouseo village, two water tanks were built to enable the development of home gardens and small plots. This village spreads into different clusters and has a high number of households. Water shortage is severe during the dry season. Introduction of these water tanks make clean water available for household consumption, hygiene and sanitation and home gardens in the village.

**Figure 3. Technical support for the water supply system**



In addition, the project provided the technical assistance to link the water system to schools and improved toilet facilities to help pupils and teachers to implement water sanitation and hygiene (WASH) practices. The community leaders and teachers asked to extend the water pipes from the new water tank to schools. Available clean water at school enhances hygiene and sanitation practices for pupils. Integrating WASH programmes into the school curriculum has been used to promote school gardens.

#### *Introduction of agroecological farming systems*

The quantitative surveys and the result of the participative workshops showed that, most of the year, the village communities rely only on their own agriculture production to cover their nutritional needs. Indeed, markets are located far from the villages - they are reached in about 1.5 to 2 hours in the dry season and are often inaccessible in the rainy season. Therefore, several agricultural production activities based on agroecological techniques were introduced by the project team and co-implemented by farmers.

Species which are often neglected in vegetable gardens were introduced first in agroecological demonstration plots in the targeted villages. By introducing integrated agricultural practices, the goal of these agroecological plots was to showcase the transition from monocropping systems like maize cultivation to diverse and healthy food production systems. Local extensionists from PAFO and agronomists of the NSAE team provided technical assistance to farmers to implement agroecological techniques in the demo plots. These integrated systems included fruit trees, legumes (including peanuts and soybeans), carrots, sweet potatoes, and sunflowers.

In a second phase, based on a list of targeted crops set up during the participatory workshop, in each village, PAFO distributed seeds and seedlings to the farmers (Figure 4) to enhance crop diversification in their home gardens and farm plots:

- lychee, mango, peanuts, carrot, soybean, yam, sweet potatoes, longan, pomelo, and chestnut in Ban Na;
- chestnut, pomelo, lychee, jack fruit, rambutan, mango, long bean, and sweet potatoes in Buaknam cluster (Pouseo village);
- sweet potatoes, peanut, soybean, sunflower, jackfruit, mango, chestnut, longan, litchi and pomelo in Naseo clusters (Pouseo village).

Fruit trees like longan, lychee, mango and pomelo were planted for future availability of fruits in the villages while local plants like peanut, soybean and sweet potato were planted to supply nutrient dense foods for the community and to provide seeds to be reused in the future. In the uplands, where many farmers practise rainfed rice, maize and Job's tear production, the NSAE team and PAFO technical officers promoted pumpkin, soybean and peanut cultivation to enhance more local FSFs at the household level. In addition, seedlings of "super foods" available all-year round like moringa and "pak van" (*Sauropus androgynus*) were provided. Additionally, as knowledge and behaviour change on healthy food consumption and production starts with the young generation, the NSAE project provided seeds and technical assistance to develop agroecological gardens in primary schools in the villages.

**Figure 4. Seeds and seedlings distribution and agroecological demonstration plots**



### *Training on fruit trees pruning, pest and diseases control*

Many farmers complained that their fruit trees and vegetable gardens were often affected by diseases. To address this obstacle, in each village, the NSAE team provided different on-site training (Figure 5) and technical sheets in Lao language (see annex 3) on fruit tree pruning, on proper management of banana plants, and on easy techniques for healthy vegetable production (including soil protection and improvement, intercropping and water use).

**Figure 5. Theoretical and practical training on fruit trees pruning and diseases treatment**



### *Farmers to farmers exchanges*

A total of 27 farmers, including 12 women from Ban Na and Ban Pouseo, took part in a visit to agroecological projects implemented in 3 villages in Xiengkhouang province (Ban Phumuang in Kham district, Ban Khay in Pek district and Ban Naphia in Phaxay district) supported by the Agroecology and safe food system in South-east Asia (ASSET) project.

The main objective of this study tour was to foster farmers to farmers exchanges, in particular farmers from NSAE target villages and farmers who are already engaged into AE transition through different field visits:

- visit and exchanges with coffee farmer group (crop diversification, nutrition) in Kham and Phaxay districts;
- visit and exchanges with a farmer group which produces organic vegetables (Khay village, Pek District);
- visit and exchanges with a coffee farmer group which produces coffee in agroforestry conditions (Ban Naphia, Phaxay District);
- visit to an agricultural product store in Phonesavanh selling seeds and seedlings.

Finally, this visit provided an opportunity to exchange ideas with farmers experienced in agroecological techniques used to produce a more diverse range of food (Figure 6).

This initiative helps to better disseminate agricultural advice on the challenges that farmers in Ban Na and Ban Pouseo can expect to face when implementing their own agroecological crops, and ways to overcome them.

**Figure 6. Knowledge exchange with farmers on agroecological techniques and crop associations in Ban Ban Phumuang and Ban Khay.**



### 2.2.2. Interventions on food consumption and nutrition

Regarding food consumption and nutrition, the main obstacles identified during the previous steps of the research study are financial constraints, lack of time, lack of knowledge regarding infant and young child feeding. Other obstacles identified relate to food production and food supply, which are addressed in the sub-sections above and below. After several consultations with the community members, leaders, village heads, local authorities and development partners, different interventions were designed to help local children, men and women to consume healthier and more diverse foods.

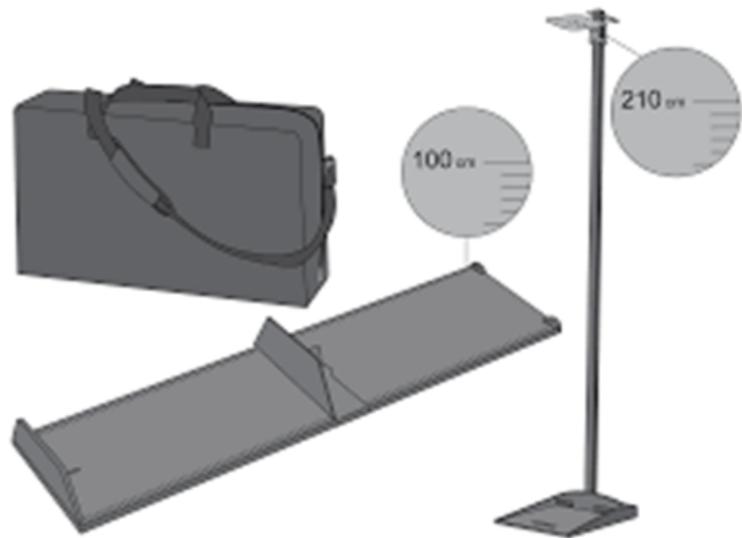
#### *Training for Village Health Volunteers (VHVs)*

Qualitative and quantitative surveys in the villages have shown that parents do not believe malnutrition was a problem that affected them or their children. Several reasons account for this belief. The first is that micronutrient deficiencies, also known as “hidden hunger” (micronutrient malnutrition) or stunted growth (chronic malnutrition, children who are too small for their age), are difficult to detect, unlike wasting (acute malnutrition). This is especially true when a large proportion of children are affected. The second reason is that families are often not followed up by a health service after giving birth, which could monitor the nutritional status of the child, diagnose him/her, alert the parents and take appropriate action. Thus, parents, unaware that their children are suffering from malnutrition and micronutrient deficiencies, cannot act.

The first step of the intervention was therefore to monitor the children and train Village Health Volunteers (VHVs) within the village to be able to monitor the nutritional status of the children, give basic recommendations and refer parents to the health centre if necessary. The project team trained village health volunteers in weighing and measuring children (Figure 7), as well as in the basics of nutritional recommendations, during several sessions. The team created a small, fun booklet explaining the different forms of malnutrition, its causes and consequences on children's development and health, as well as advice to give to parents at the birth of their child or in cases of chronic or acute malnutrition. In collaboration with volunteers, village children underwent regular height and weight measurements. This data, including age, was documented in health records to track and identify cases of malnutrition.

The team observed that the staff at the health centres are not trained in monitoring children's nutrition and lack advising skills and service. Women who give birth at the health centre or who consult before or after giving birth receive very little nutritional advice and guidance. To address this, staff from local health centres were brought to the intervention villages for dedicated training. This intervention was crucial in getting the community involved in the project; it served as a “gateway”. It enabled many parents (almost half of the children) to realise that their children were suffering from malnutrition and thus to become much more involved in the various activities of the project.

**Figure 7. Training of village health volunteers on nutritional status monitoring for children**



#### *Creation of collaborative posters on food diversity and nutrition*

Nutritional communication materials, including posters and videos, have been developed with recommendations tailored to local needs and constraints. This was achieved during a participatory workshop by adapting and discussing standard guidelines from the government and international institutions, covering topics such as the importance of exclusive breastfeeding, age-appropriate dietary diversification, malnutrition and the risks associated with ultra-processed foods for young children.

The participants then expressed their opinions on these messages:

Positive opinions:

- Certain messages and information are important to know to take good care of ones' child.
- Some illustrations are accompanied by drawings and are quick and easy to understand.
- Some of the recommendations are easy to implement.

Negative opinions:

- Participants do not feel that the messages are directed at them: images and texts that appear to focus on Lao Lum culture (the main ethnic group) in urban areas, featuring clothing, food and customs associated with the Lao Lum ethnic group.
- Some recommendations are impossible to implement, such as exclusive breastfeeding for six months, particularly during harvest season, or the use of a breast pump, or eating several fruits and vegetables a day.
- The messages are confusing: the illustrations and texts are sometimes difficult to understand, and the information is not organised in a coherent manner (e.g. fruits are shown alongside times of day rather than other foods; suns are used to represent different times of day, etc.).
- Above all, participants do not understand why they must apply these recommendations, nor the risks if they do not.

Drawing on these materials and discussions, the community identified key messages they wished to illustrate and share. Working in small groups, participants then adapted these messages to create their own communication tools, either through posters (Figure 8) or videos for social media (TikTok, Facebook, Instagram). Based on the community members' drawings and texts, CIRAD's regional graphic designer edited the posters (see Annex 4).

**Figure 8. Illustration created by the participants to convey messages that are understandable to the community on food diversity and nutrition issues.**



Using these posters and videos, the participants facilitated sessions to present the selected recommendations to the broader community (Figure 9). The videos were screened in the village and shared via social media while the posters remain permanently displayed in each village's community halls.

**Figure 9. Posters presented by their designers to the community**



*Cooking workshops for recipes suitable for young children*

Quantitative surveys revealed that children aged 6 to 23 months ate very few vegetables, even though they are available within the household and their mothers consumed some. This gap in consumption is attributed to several factors: vegetables are often cut into large pieces unsuitable for very young children who do not yet have teeth, and mothers reported that the children “do not like vegetables”.

To address these barriers, the project team developed cooking workshops (Figure 10) involving mothers and grandmothers, who are mainly responsible for looking after the children and managing the family's food. The project team developed simple recipes for purées (mashed) and compotes, which can be cooked very quickly, using locally available, affordable and culturally accepted foods, i.e. those already consumed by mothers in families.

Suggesting simple recipes was crucial: even though complex recipes might be extremely diverse and rich in micronutrients, households usually do not have the ingredients required. As children's dietary diversity is extremely low, the main goal of this intervention was to introduce at least one fruit, legume or vegetable per day in the diet and to try to vary from one day to the next.

Once a month, recipes were suggested for cooking vegetables, fruit and legumes purées using locally available ingredients (pumpkin, soya, banana, etc.) and only common utensils such as strainers and spoons. Each recipe contained very few ingredients. For example, the squash purée consisted of boiling the squash and mashing it with a spoonful of oil. For each recipe, the project team explained to the community that depending on their available resources, tastes and the age of the child, it was possible to add cereal (rice or rice flour, etc.), egg, meat or fish or any other food. Although families were initially sceptical about the palatability of purées thout added salt or sugar, the children - with a very few exceptions -enjoyed the food. At the beginning of each session, instructional recipe sheets were provided to the cooking workshop’s participants.

**Figure 10: Example of recipe used during the cooking workshops**

**ຜັກບົດເພື່ອເດັກນ້ອຍ**  
ເພື່ອເຮັດໃຫ້ເດັກມີອຸຊະນາມແຂງແຮງ!

ໂຄງການນິເວດກະສິກໍາເພື່ອໄພຊະນາການ (NSAE) ສ່ວນປະສົມ ອາຫານສໍາລັບເດັກ

**1 ບົດໝາກອຶ ແລະ ມັນຕ່າງ**

ປອກເປືອກ ແລະ ຄັດປັ້ນຕ່ອນນ້ອຍໆ

ຕົ້ມ ຫຼື ຫນົ່ງໃຫ້ເປືອຍ

ຕໍາ ຫຼື ບົດໃຫ້ລະອຽດໃນຕະແກງ

ຕົ້ມນໍ້າມັນ 1 ປ່ວງກາຝ

**ພ້ອມເລີ້ມ !**  
ຜັກບົດທີ່ລະອຽດ

**ຄໍາແນະນໍາເພີ່ມເຕີມ:**

- ປະສົມໃສ່ໃນອາຫານຂອງເດັກ (ຕາມອາຍຸຂອງເດັກນ້ອຍ)
- ສາມາດເພີ່ມໄຂ່, ປາ ຫຼື ວ່າຜັກອື່ນໆ ຂ້າມາໃນຕາມທີ່ຕ້ອງການ
- ຖ້າເດັກນ້ອຍອາຍຸເກີນ 10 ເດືອນ ສາມາດເປັນຕອນແລ້ວໃຫ້ກິນໄດ້ເລີຍ















### *Forum theatre to raise awareness of the risks of ultra-processed foods for young children*

In the two hamlets that have local shops (Buaknam and Naseo), the surveys revealed high consumption of ultra-processed fatty, sweet and salty products among young children (aged 6 and 23 months). In May and December, the quantitative survey showed that 70% and 60% of children respectively consumed sugary foods such as sweets or cakes, 12% and 21% consumed soft drinks, and 7% and 30% consumed savoury snacks or instant noodles. Furthermore, during qualitative surveys, the research team observed that parents often gave sweets and sweet or savoury snacks to young children, starting at breakfast. Workshops with mothers and grandmothers revealed that they give these foods to children from the age of one daily. These foods are not considered harmful to young children by the community. They are very inexpensive, convenient (ready-to-eat, packaged), available in the village and very popular with children.

To address the health risks associated with ultra-processed products, the NSAE team implemented an awareness-raising initiative using forum theatre. A short play was created by the participants and performed for the community. This participatory approach allowed community members to discuss the scenes and actively participate on stage by modifying character roles or proposing alternative scenarios. The session began with a small group of volunteers engaged in warm-up exercises to “break the ice”, foster trust, encourage public speaking, and increase physical confidence. These activities paved the way for a deeper dialogue on the consumption of ultra-processed foods. Participants exchanged diverse perspectives on children's consumption of ultra-processed foods, examining both the convenience and appeal of these products alongside their identified downsides and long-term health risks. Drawing from these discussions, the participants co-designed a skit that highlighted the trade-offs between short-term convenience and long-term health consequences. The performance depicted a family providing ultra-processed foods to their child as a means of comfort, a time-saving measure, and a way to manage behaviour, but over time, the narrative shifted to show the child struggling with a lack of concentration during schoolwork, the development of dental cavities, and recurring illness. The community members perceived that the short-term advantages of ultra-processed foods - low cost, time saving, keeping children occupied, making them happy - disappear in the long term. After numerous rehearsals, allowing participants to feel comfortable and improve the scene, adding humour and real-life experiences, the participants performed it in their respective communities. A large audience turned up to see their neighbours and friends perform. The audience did not wish to come on stage to suggest alternatives, but the skit also sparked many reactions, discussions, exchanges of experiences and testimonials.

**Figure 11. Forum theatre session in Ban Pouseo village**



### *Feasibility study for a kindergarten*

The establishment of a community nursery was requested as an intervention in Ban Pouseo (both in Naseo and Buaknam clusters). In the Lao PDR, formal schooling typically begins at age 6. Consequently, women take care of their children full-time until that age, which greatly limits their productive activities. Furthermore, women often provide full-time childcare until that age, a situation that significantly limits their involvement in productive and income-generating activities. Parents frequently bring young children to the fields, where they lack developmental stimulation and face concerning levels of exposure to chemical inputs. To address these issues, a feasibility study was initiated to evaluate legal, financial, and organisational frameworks for setting up kindergartens.

The study was initiated with a consultation meeting at the Phoukhood District Education and Sports Office to ensure alignment with official early childhood education policies. This stage involved collecting data on nurseries, requirements and recommendations (number of children per volunteer, etc.) and existing support mechanisms provided by the district. In particular, the office offered its technical support. Then, meetings were organised in the villages with local authorities, village chiefs and the Women's Union to obtain their support and discuss organisational conditions (location of the nursery, necessary infrastructure, etc.). Regarding infrastructure, the assessment checked whether the current premises meet the safety, accessibility and water, sanitation and hygiene (WASH) standards required for nurseries. It was accompanied by a mapping of resources to estimate the budget required to set up and run the nursery using local materials.

Workshops with parents, caregivers (grandparents) and the village education development committee identified the community's expectations. Data was collected on the family's demands, including the number of children interested, their age group, the required opening hours throughout the year and the price of the nursery. The study also examined human resources by identifying potential volunteers inside and outside the village, determining their training needs and establishing fair remuneration or income conditions. A sustainable economic model was developed by analysing costs, fees for families and potential sources of funding from the government or community contributions.

As nutrition is the central focus of the project, the study examined the possibility of introducing a canteen system for potential nurseries to ensure a healthy and varied diet for young children. Currently, in primary schools, pupils bring their own lunch, often consisting of rice, supplemented with an egg or fish or chicken. The study considered the possibility of introducing meals based on local foods and determining who could be responsible for purchasing/collecting the products and preparing the meals.

Finally, the preliminary conclusions and proposed management models are being drafted and presented to the Provincial Education and Sports Service for further advice. While the feasibility study for the community kindergartens was completed and very well received, due to local budget limitation, the nurseries themselves have not yet been established.

### **2.2.3. Interventions on food processing and supply**

The main obstacles identified during the previous steps of the research study were:

- production constraints;
- economic constraints to purchase healthy foods;
- availability and physical accessibility of healthy foods;
- Seasonality of food offer.

Based on this diagnosis, interventions on food processing and food purchasing have been suggested and further implemented.

### *Improving and fostering food processing and storing*

The actionable interventions on processing healthy foods were designed for children, men, women and older people in the target villages. The designed activities were prioritised for their simplicity and applicability, using available raw materials. This approach ensured that community members could independently sustain food processing and cooking practices after the project conclusion.

A feasibility study has been carried out to assess the needs to improve processing, drying and storage of different fruits, vegetables and seeds (pumpkin, cucumbers, sunflowers, etc.). The NSAE team observed that Hmong villages had traditionally used stone mills to make rice, maize, soy and cassava powder for foods and desserts. In Ban Na, the stone grinder was dirty, unhygienic and used exclusively for milling maize for animals. In both target villages, the communities did not have experience on soya milk production and used to buy expensive processed bottles of soya milk from markets. While PAFO supported restoration of the grinder, the project team provided training to use this grinder to process soybean paste, tofu and soy milk (Figure 12). Soy milk was obtained by soaking soybeans overnight, grounding them with additional water, and squeezing the paste thus obtained. Raw soy milk can be boiled for pasteurisation and to reduce the “raw” smell of soybean. In addition, raw soy milk can be steamed to make tofu and dry tuft skim which can be preserved. Soybean waste can be used to feed animals, or mixed with sweet potato to make a deep-fried healthy balls, or mixed with sticky rice and banana and then steamed to produce a dessert. These recipes were easy to implement, using local soybeans and sweet potatoes, and the meals were appreciated by children.

**Figure 12. Use of the restored traditional millstone for making soy milk**



Regarding food preservation and drying methods, the initial diagnosis revealed that local dry ovens were mainly used to dry natural red mushrooms for sale. The community members indicated that didn't dry other foods, although they have a lot of pumpkins and Job's tears from upland fields. With the support of PAFO, a technical assistance has been provided to foster the production of dry pumpkins that can be stored for several weeks before consumption (e.g. stir-fried with other vegetables or crushed in soups).

### *Setting up collective purchase groups at village level*

To encourage nutritionally beneficial purchases, the NSE project introduced food vouchers to help families buy more healthy foods directly in the villages (Figure 13). This initiative supported by PAFO aimed to lower the purchase price by saving on transport costs and to create a locally available supply of healthy food by initiating a collective purchase group. Each family wishing to benefit from these vouchers on a voluntary basis determined the amount they wished to contribute to this collective purchasing group. PAFO distributed the vouchers in two stages. For the first vouchers, community members who were willing to be part of this purchase group paid 50% of the value of the voucher, to encourage them to buy healthy products. In a second round of purchases, the subsidy was reduced to 10% to promote the programme's self-sufficiency and to prefigure the collective purchase groups that the project seeks to establish. For the first round, the foods (mango, apple, papaya, rambutan, carrot, tomato, cabbage, pumpkin, peanut, soybean) have been delivered with the support of the project team.

In Ban Na village, as there are no shops nearby, a cooperative (collective purchase group) was created. It is run by a manager (the village head). In Ban Pouseo, where local shops exist, the initiative was managed by two shop owners (one in each hamlet). The cooperative manager, or shop owner, could only receive vouchers in exchange for healthy foods purchased by the project. Healthy foods and vouchers could not be exchanged against money. The cooperative manager, or shop owner, received compensation for running the store, which corresponds to 10% of the value of sales. The rest of the cooperative's or shop's profits is meant to be reinvested to repurchase a stock of healthy food.

**Figure 13 Vouchers used to access food in the target village's shops and cooperative**



## 2.3 Impact pathways of the interventions

### 2.3.1. Methodology for impact pathway evaluation

As the NSAE project was scheduled to run for less than two years, it was decided at the early stage of the project design that conducting an impact evaluation was not feasible (see inception report, Deliverable 2). However, documenting the project implementation is essential to understand how beneficiaries receive and use interventions, as well as how participants' behaviours and perceptions evolve. While traditional impact evaluations determine whether a programme works, process evaluations explain how and why outcomes occur (Savy et al., 2020).

Given the short time between the implementation of the interventions and the completion of the evaluation, we chose to apply a simplified participatory impact pathway analysis (Douthwaithe et al., 2007). This evaluation method offers a practical framework to address the implementation gaps in complex programme. In recent years, an increasing number of nutrition programme evaluations have adopted the impact pathway approach to support interpretation of impact results and identification of corrective actions (Mattes et al, 2022).

Participatory impact pathways analysis maps the theoretical causal chain linking inputs, processes, outputs, outcomes, and impacts, while accounting for contextual factors, enabling conditions and organisational structures. Regarding the NSAE research project, inputs are equated with the resources provided by the project (financial resources and technical support from the project teams), while processes are the participatory approaches that have been deployed to define interventions. In our simplified approach, we therefore focus our attention on the causal chains between outputs (the various interventions), outcomes (observed) and impacts (expected). For some interventions, we have sketched an impact pathway map to better visualise the causal links and the enabling conditions for impact at scale.

To conduct this impact pathways evaluation, we have built an evaluation matrix (See Annex 5), set up interviews and organised focus groups to collect data in the villages:

- 3 focus groups to assess the interventions on food production, processing and supply, including the participation of:
  - 14 women and 2 men in Ban Na;
  - 15 women and 5 men in Ban Pouseo, Naseo cluster;
  - 16 women and 3 men in Ban Pouseo, Buaknam cluster.
- 2 interviews of the Village Health Volunteers (VHVs)
- 2 focus groups to assess the intervention on food consumption and nutrition:
  - 7 women and 1 man in Ban Na;
  - 7 women at Ban Pouseo.

### 2.3.2. Impact pathways of the interventions on food production

#### *Water distribution systems*

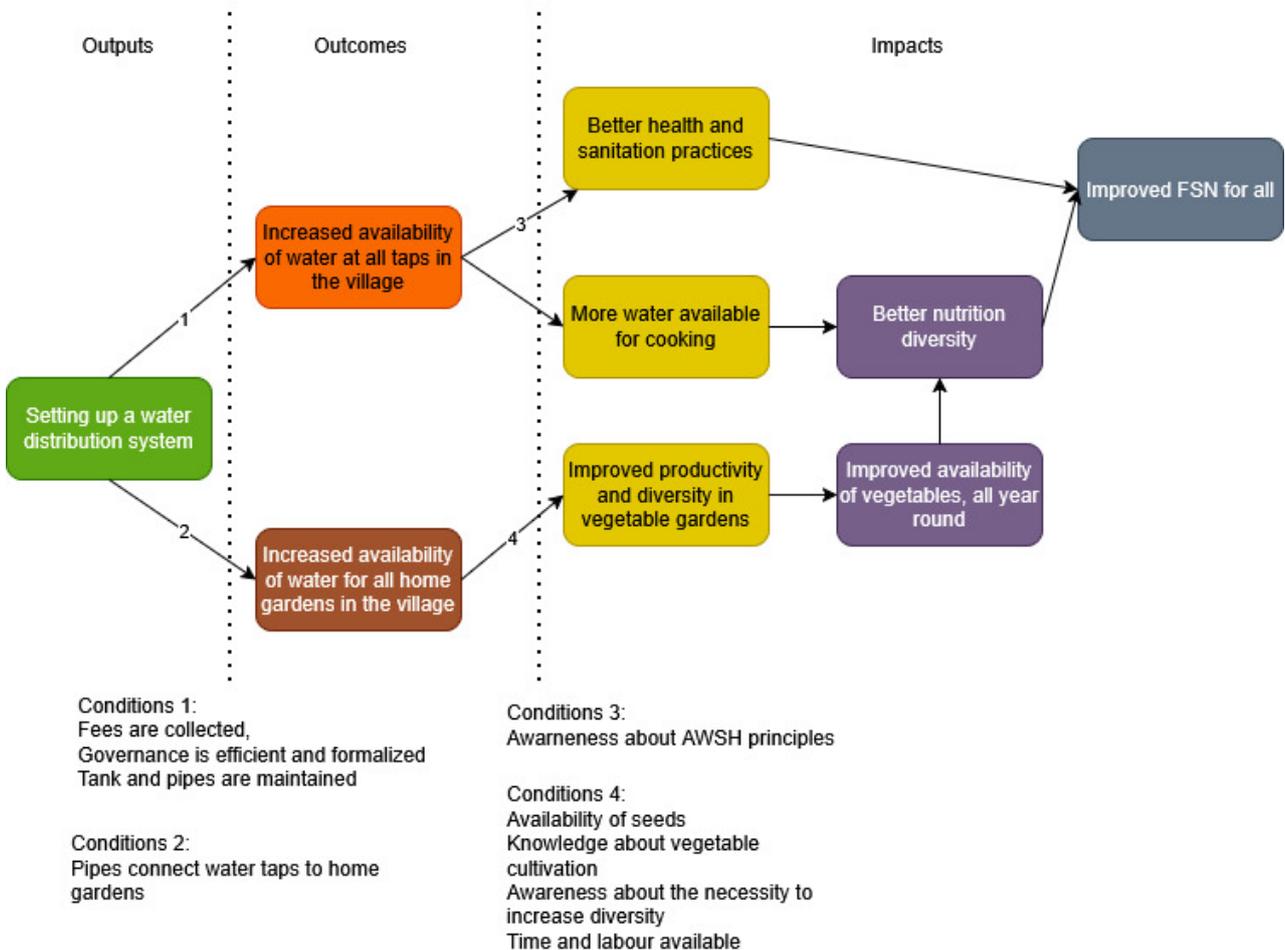
In Ban Na, with the support of PAFO technicians, the water tank has been connected to four access points (taps), providing sufficient water to each household. The rules for managing the water distribution system were established and shared, and a governance structure was defined, including a management committee. To maintain the village water distribution network, a fee of 1,000 kip per month per household is collected

by the village chief. At the time of the evaluation visit (in October 2025, at the end of the rainy season), the water tank was full, and the community did not suffer from hydric shortage. Beneficiaries already reported noticeable changes linked to this intervention, such as improved hygiene and the possibility of using more water for cooking. Due to improved access to water, they planned to expand their vegetable gardens and subsequently to apply the agroecological techniques observed on the demonstration plots (Figure 14).

In Ban Pouseo , The same rules and governance system were applied. A yearly fee of 20.000 kip per family is collected to pay the labour to maintain the system and the village head plans to increase it to 40.000 from 2026. The water tank was also full at the time of the visit. In Naseo hamlet, the community planned to use the new pipes that they had purchased to connect it to the water system after the rice harvest (in late October). Two people in the village oversee the proper water supply. The main challenge faced is that most production land, including vegetable gardens and fruit plots is in lower zones, far from the village centre. Only 9 houses have been reported to have a connection between their home gardens and the water tank.

In Buaknam hamlet, houses are gathered along the main road, and most vegetable gardens are in the vicinity of the houses - even though many households do not maintain a home garden *per se*. Families access water taps easily to irrigate their garden or for domestic use. They have noted improved hygiene practices and more water availability for cooking.

**Figure 14: Pathway for the setting up of a water distribution system to achieve desired impacts at scale.**



### *Seeds distribution and development of agroecological plots*

Thanks to seed distribution, the quantity and diversity of agricultural products harvested have substantially increased, which significantly improved the dietary diversity of families. All the households of this village benefited from this intervention, while in Ban Pouseo, more than 70 % of the Lao Lum community and only 15% of the Hmong community have developed plots with seeds provided by the project.

Sweet potatoes have been distributed to the community in the target villages for sprouting and planting. Cultivation has been quite successful in Ban Na village where farmers estimate that between September and November, 60 to 80 harvests of sweet potatoes were completed. In Ban Pouseo, on the contrary, cultivation has been less successful as some farmers reported that some plants did not give tubers yet, because they were planted in August, whereas the most favourable sowing period for the growth of this plant is April-May.

The families processed part of the sweet potatoes to make sweet desserts for children. They steamed the sweet potatoes and added some sugar. Adults consumed sweet potatoes as a side dish. When the families have a lot of sweet potatoes at home, they do not eat rice. Sweet potatoes are not stored, apart from a few families who know how to preserve rhizomes for planting and propagation at the following season.

The peanut seeds distributed were mostly planted in the uplands (distant sloping lands which are actually below the village in Ban Na and Buaknam) because the weather is better (warmer) and the productivity is higher. In Buaknam, some families tried to intercrop peanuts and maize, but even though it improved maize growth, peanuts did not grow well due to lack of sun. Although the beneficiaries were unable to estimate the quantity of peanuts produced, as the harvest was barely starting, they believed that yields would be good. Most of the harvested peanuts were boiled for consumption. Some were dried, fried and crushed to be mixed with sticky rice to improve children's diets. Most families spared 1 or 2 kg from the harvest to replant the next year.

The soybean harvest season was planned to start at the end of October in Ban Na. In Buaknam, soybeans were distributed and planted in August, but some farmers complained that the plants did not grow well and yields were rather low. The sowings were done too late to produce good results, which shows the importance of carefully following the planting calendar for each species. In both villages, the harvested soybeans are eaten mainly crushed and boiled. The cooking water is consumed as a soup, while most of the families mixed the solid part with meat and vegetables. Some seeds were kept aside to be replanted the next year. Carrots have been planted during the summer but were not ready for harvesting at the time of the evaluation visit. Fruit trees that have been planted did of course not bear any fruits, but in Ban Na, the farmers argued that all of them were growing well, especially mango and pomelo trees.

The main changes brought about by the project are the replacement of a diet based mainly on rice, flesh food, and leafy vegetables, with a diet that significantly incorporates peanuts, soybeans, and sweet potatoes, sometimes as a substitute for rice.

The main constraints to these changes are the additional working time required to grow these food products and the limited agricultural land available for cultivation. Families prioritise cash crops to increase their income. They cannot base their family farming solely on food crops. A balance must be found between what is produced to generate income and what is produced for food.

The beneficiaries of the intervention expressed a desire to learn more about agroecological farming techniques, particularly regarding the development of crop-livestock integration techniques that could improve the fertility of food-producing plots and increase the quantity of healthy food produced.

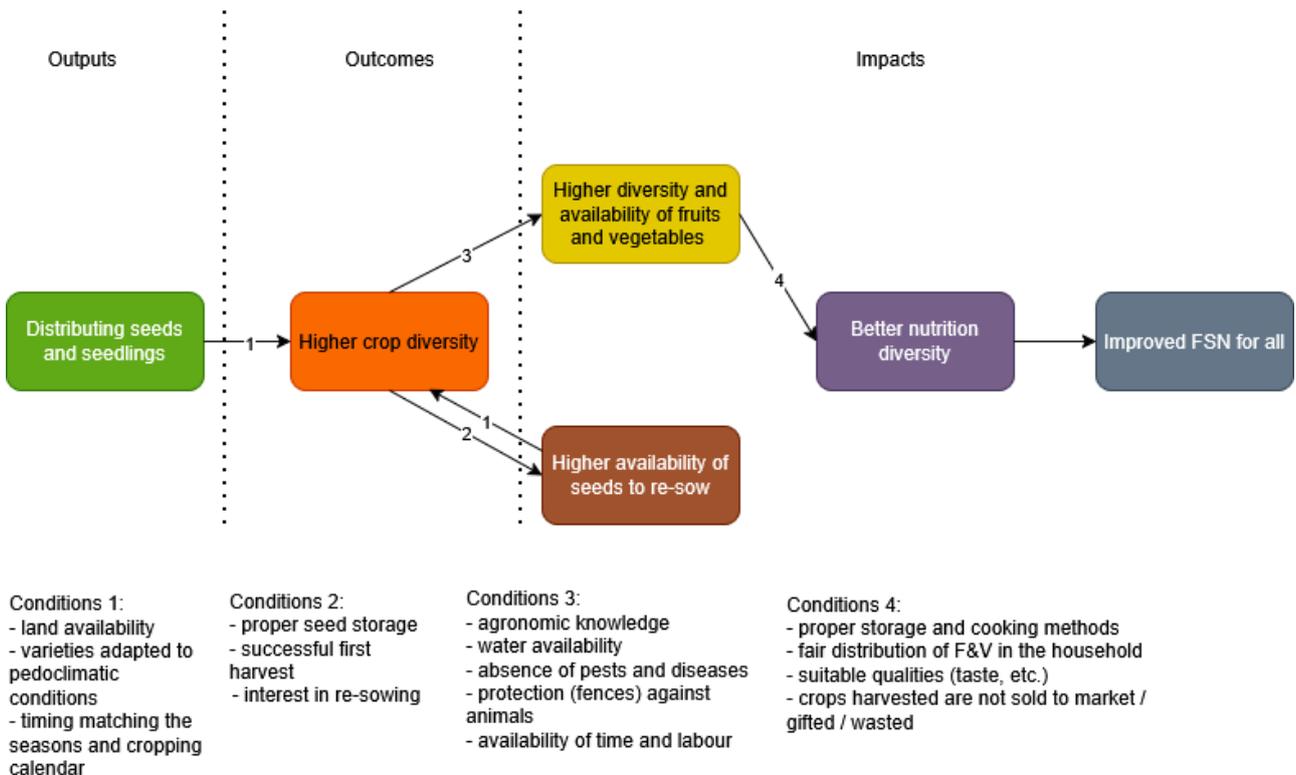
Besides, some farmers plan to expand their home garden the next year so as to also produce vegetables for market sales. The “commodification” of home garden production might bring higher revenues to farmers but should ideally not be done at the expense of dietary diversity. The assumption is that the awareness-raising campaigns that have been carried out will encourage the farmers to keep part of their production for their own family consumption.

*“The seeds that we received through the project changed the way we eat compared to last year.”* Woman, Ban Na.

Difficulties met:

- Improper cropping calendar (seed distribution happened too late in the year so some plants failed - peanuts, etc.).
- Seed varieties not adapted to the local pedoclimatic context.
- Necessity to accompany seed distribution with intensive training about sowing and growing practices.

**Figure 19: Pathway for distribution of seeds and seedlings to achieve desired impacts at scale**



### *Trainings on agronomic practices for fruit trees*

It is obviously not possible to assess changes in fruit consumption resulting from the distribution of young fruit tree seedlings through the project. The assessment therefore focused instead on maintenance and the difficulties encountered by farmers in developing fruit production. The main problems encountered in Ban Na are damages caused by animals trampling young trees and eating their leaves, leading to the death of the plant. However, agricultural technicians from the district and province responded quickly by providing materials to build barriers around the young plants. Farmers also reported paying particular attention to maintaining fruit trees on upland plots, especially so that slash-and-burn practices do not damage them. If the fruit trees grow well, they plan to plant more and sell the fruits at local markets.

In Ban Pouseo village, some fruit trees appear to be growing well (mango trees, pomelo trees), while others are in poorer conditions. According to the agronomists, members of the research team, soil quality may explain this difference. Additional technical assistance would help to better adapt fruit tree varieties not only to the climate, but also to the type of soil.

### *Farmers to farmers exchanges*

Farmers-to-farmers exchanges served as a vital mechanism for knowledge transfer, enabling the sharing of effective agroecological practices rooted in key principles such as input reduction, soil health, biodiversity conservation, and the co-creation of knowledge. These exchanges facilitated direct learning opportunities among farmers, allowing them to gain insights into innovative agroecological techniques. As a result, participants witnessed an increase in their understanding and implementation of practices that fostered sustainable agriculture, ultimately contributing to enhanced soil health and biodiversity within their communities.

For these outcomes to be sustainable, once the project is completed, ongoing technical assistance from PAFO and DAFO proved crucial. Their support ensured that farmers not only acquired knowledge but also received guidance on how to effectively apply these techniques in their specific contexts. This collaboration aided in reinforcing the principles learned, promoting an environment where continuous improvement and adaptation of agroecological practices could thrive.

The expected outcomes of these exchanges included an increase in the production of diverse foods, which directly contributed to improved nutrition diversity within the community. As farmers adopted and adapted agroecological techniques shared through these exchanges, they diversified their crops, leading to a richer dietary intake for their families.

Nevertheless, certain challenges have to be addressed to fully realise the potential of farmers-to-farmers exchanges. Limited land area constrained the ability to expand agroecological plots at the village level, making it difficult to scale up these practices. Additionally, time constraints impacted both the development and testing of labour-intensive agroecological techniques and the training of other farmers. Addressing these difficulties is essential for ensuring that the knowledge gained through these exchanges could be effectively disseminated, leading to sustained benefits for the entire community.

### 2.3.3. Impact pathways of the interventions on food consumption and nutrition

#### *Training for Village Health Volunteers (VHVs)*

The impact pathway for this intervention focuses on empowering Village Health Volunteers (VHVs) to bridge the gap between community-level monitoring and clinical health services. By providing technical training, the project enables VHVs to identify nutritional deficits early, offer localised dietary recommendations, and facilitate timely and costly referrals to health centres.

The training programme successfully equipped VHVs with the technical competencies required to assess child development and provide nutritional guidance. The training focused on:

- Growth monitoring: VHVs learned to accurately weigh and measure the height of children relative to their age to determine nutritional status.
- Nutritional counselling: VHVs were trained to give basic recommendations on feeding young children, particularly on dietary diversification.
- Identification of severe malnutrition cases: VHVs have acquired the ability to distinguish between moderate and severe malnutrition, enabling a two-tiered response that allows severe malnutrition cases to be referred as quickly as possible to the nearest district hospital or health centre.

The pathway from training to action was operationalised through regular community-based screenings. Using scales and height measuring devices, the project team enabled VHVs to carry out monitoring in accordance with the assigned standards directly in the target villages. VHVs have established a monthly monitoring schedule. Despite challenges, they consistently check approximately 13–14 children per session. The first monitoring revealed significant nutritional challenges, with approximately 50% of children identified as stunted (15 out of 32 in Ban Pouseo; 14 out of 24 in Ban Na).

*“All the knowledge I have gained through the project is very useful for me and for the people in our village, because I know how to measure children's weight and height and record their measurements and age, which allows us to know which children are malnourished or below nutritional standards”* VHV, Ban Pouseo

The presence of trained referents has created a localised support system, though it also highlights the anxiety that parents feel regarding their children's health. VHVs report a high sense of utility in being able to identify children who were stunted, allowing for immediate intervention. While parents are eager for solutions, their reactions often reveal a reliance on clinical solutions, such as medicine, highlighting the need for continued education on the role of diet in growth.

*“If I notice that some children are malnourished but not seriously so, I will suggest to their parents that they increase the amount of food they give them and provide them with a wider variety of foods.”* VHV, Ban Na

*“What should I do? What medicine should I buy?”* Mother of a stunted child, Ban Na

#### *Creation of collaborative posters on food diversity and nutrition*

This intervention used a participatory approach to develop communication materials (specifically posters and videos) designed to raise awareness about food diversity and malnutrition through creative social engagement. Nine people (four men and five women) in Ban Na and seven in Ban Pouseo (one man) have participated in the workshops.

The process of creating collaborative posters and videos served as a powerful tool for reinforcing nutritional knowledge. Participants moved beyond passive learning to active communication of key health messages regarding:

- malnutrition prevention: participants identified the importance of dietary diversity (they included beans, pumpkin, eggs, and vegetables in the meal preparation) to combat child malnutrition;

- unhealthy food awareness: a specific focus was placed on the negative health impacts of the consumption of ultra-processed food for young children (candies, sodas, cakes, crisps, etc.);
- adult nutrition: the workshops also broadened the understanding of dietary needs for adults, emphasising a wide variety of proteins and vegetables.

*“We made a video and posters about child nutrition and malnutrition to explain to other villagers the consequences of excessive consumption of sweets and sugar in children.”* Mother in Ban Pouseo

*“Excessive consumption of sweets can lead to stomach aches and toothache”.* Mother in Ban Pouseo

*“Now I feel reluctant to supply candies.”* Shop owner, Naseo hamlet.

In addition, the collaborative nature of the workshops fostered a convivial atmosphere that broke social barriers and encouraged community dialogue. The activity allowed the community members to discuss topics such as nutrition and childcare that had previously not been part of their social discourse. Participants began acting as nutrition advocates within their own communities.

*“We explained to our neighbours that they could cook rice with pumpkin, vegetables, eggs, salt, oil and other ingredients.”* Mother in Ban Pouseo

The impact pathway demonstrates a direct link between the creation of these visual materials and changes in household cooking habits. Regarding dietary diversification, families reported increasing the variety of ingredients in their daily meals. Specific adjustments to improve dietary intake included the addition of healthy fats and proteins to children's meals.

*“After the workshop, we added fish and meat to the menu... Then we added taro and oil to the children's meals.”* Mother in Ban Pouseo

#### *Using social media for scaling-out*

The intervention established a foundation for wider dissemination of social behaviour changes among families in the target villages through social media. Participants in both villages expressed a strong desire to make and share the videos and photos on Facebook and TikTok to reach relatives and other parents.

*“In the future, we will use the photos and videos to share them on Facebook so that parents of young children can watch, discover and learn together.”* Mother Ban Pouseo

#### *Cooking workshops for recipes suitable for young children*

The impact pathway of this intervention focuses on transforming nutritional knowledge into behavioural changes in meal preparation and the introduction of fruit, vegetables and pulses into the diets of young children, supported by the provision of appropriate cooking utensils and simple recipes adapted to local conditions.

The project successfully mobilised women (mothers and grand-mothers) and their young children (under 6) in the target villages, with attendance ranging from all households in Ban Na (22 households) to up to 30 participants per session in Ban Pouseo. Participants reported learning new techniques for preparing nutrient-dense meals, specifically mashing ingredients like pumpkins, black beans, soybeans, and bananas. For example, during the focus groups in Ban Na, participants reported that they used the recipes they had learnt several times to make porridges and mashes. Salt has been added to ensure better acceptance of the new meals by the children. There is an increased understanding that children over six months old require mashed ingredients to facilitate easier consumption and digestion.

Before the NSAE project intervention, the community members thought that mixing beans and pumpkin would have adverse effects on children's health. Now, they mix them and adapt the recipe. For children over

18 months old, they prefer not to mash the food, as older children do not like it when it is too liquid; they prefer larger pieces. For babies, they mix and mash the food. In addition, families prepare sweets using a mill: they mix ground soybeans and rice, then add sugar and boil the paste in banana leaves. New recipes have been tested: mothers learned to move beyond plain rice by incorporating proteins (eggs, meat) and vegetables into "Khao Piak" (wet rice soup) or vegetable mashes. The cooking workshops have led to high levels of satisfaction based on the children's reactions and perceived health outcomes. Mothers consistently reported that their children really like the new recipes, particularly the mashed pumpkin with egg or sugar and the Khao piak with meat.

*"Thanks to the workshop organised as part of the project, I learned how to cook purée pumpkins to feed my children. They love it."* Mother in Ban Pouseo

*"I mash pumpkins with the rice to feed the children when they were at least 6-month-old. I did this 4-5 times a day to feed my children."* Mother in Ban Na

*"I learnt how to mash the black bean, mash the vegetable, mash the banana for feeding the children."* Mother in Ban Na

*"I learned during the workshop... how to cook and mash pumpkin to feed my children. They love it."* Mother in Ban Na

*"After the cooking class, I mashed soybeans and prepared Khao piak with eggs to feed my children. When a child is over 6 months old, all ingredients must be mashed to make them easier to eat."* Mother in Ban Na.

The cooking workshop participants believe these recipes make their children stronger, support faster growth, and contribute to good brain development and memory. This positive reinforcement is a key driver for continued adoption of the cooking practices.

*"The recipes seem suitable for our children and beneficial to their health, as they combine many ingredients mixed. They enable our children to eat easily, grow quickly and have a good memory at school."* Mother in Ban Pouseo

The pathway from learning to practice was strengthened by the distribution of simple kitchen equipment. In particular, the distribution of strainers has been a critical catalyst for behavioural change. Participants in both villages reported using these tools daily to prepare vegetable and fruit purées (papaya, banana, pumpkin). Some mothers have integrated these recipes into a high-frequency feeding schedule, with reports of preparing mashed pumpkin and rice up to 4-5 times per day.

*"We used it [the strainer] to mash rice and pumpkin or other ingredients for our children every day."* Mother in Ban Pouseo.

While the workshops were well-received, certain factors limit the consistent adoption of all recommended recipes. First, a significant barrier is the heavy workload in the rice fields. Many mothers noted that while the recipes are easy, they are perceived as time-consuming to prepare alongside demanding agricultural schedules. Second, while staples like pumpkin, sweet potatoes, and long beans are easily accessible, other recommended ingredients such as black beans, carrots, and tomatoes are often difficult to find locally or require traveling to distant markets.

*"The recipes aren't that difficult, but they take too much time, because we are so busy working in the rice fields that we don't have time to cook."* Mother in Ban Na

*"We can't find all the ingredients recommended by the project in our region. We are so busy with our agricultural work."* Mother in Ban Na

#### 2.3.4. Impact pathways of the interventions on food supply and processing

##### *Improving and fostering food processing and storing*

Before the interventions implemented by the NSAE project, the millstone in the village of Ban Na had been abandoned for some time. It was only used occasionally for animal feed, given the lack of maintenance. Its restoration has led families to use it to process food for human consumption, particularly to produce tofu and other soy by-products, following training provided by the NSAE project team. The millstone is also used to grind sweet corn, which families steam in banana leaves, and to produce rice flour for babies used when mothers have no milk. Since its restoration, the millstone has been used daily, to mill products both for animal feed and human consumption. Rules for using the millstone have been established. For example, people using it must clean it after use.

Participants are requesting that the project be continued to complete certain interventions on processing that they consider relevant, particularly with regard to food drying, storage and preservation techniques, so that they can maintain a healthy and diverse food supply over a longer period.

##### *Setting up collective purchase groups at village level and introducing healthy foods in local shops*

In Ban Na, long bean, cabbage, peanut, mango, pear, apple and longan have been provided by PAFO to build up the cooperative's stock. The stock was sold out in 2 days. Apple, logan and long bean are the most favourite food items bought by the families. According to the respondents, the main benefit of the cooperative is the easy access to healthy food at a cheap price.

However, participants in the focus group in Ban Na believe that if the products are no longer provided by PAFO or other entities, the cooperative will likely cease to function, as the cost of the healthy products targeted by the project remains prohibitive and families will be reluctant to commit to purchasing products in advance.

Yet the purchasing group and the availability of subsidised healthy food products in local shops has raised awareness of the need to diversify purchases. Families reported that they now buy products at the market that they never used to buy, such as soybeans. Moreover, they said they buy several types of fruit and vegetables when they go to the market, whereas previously they concentrated their purchases on one or two products only. They also plan to place orders to anyone who goes to the market to buy healthy food items for them.

As there is presently no outlet selling food items in Ban Na, collective purchases have promoted among the community the idea to establish a physical shop soon, even though no action plan for this purpose has been established yet.

The healthy food items purchased at the cooperative of Ban Na were consumed as follows: cabbages, pumpkins, and carrots were boiled and eaten in soups. The peanuts were boiled and eaten as a snack. The fruits were eaten fresh by the children very soon after purchase. The soybeans were kept at home and then processed using the village's mill to make tofu.

In Naseo cluster (Pouseo village), all the products provided by PAFO (mango, orange, longan, apple, and long bean) in the local shop, have been sold in 5 days. Families who at first did not enrol in the programme ended up buying these foods in the shop. Supplying fresh foods during the rainy season, when they cannot grow

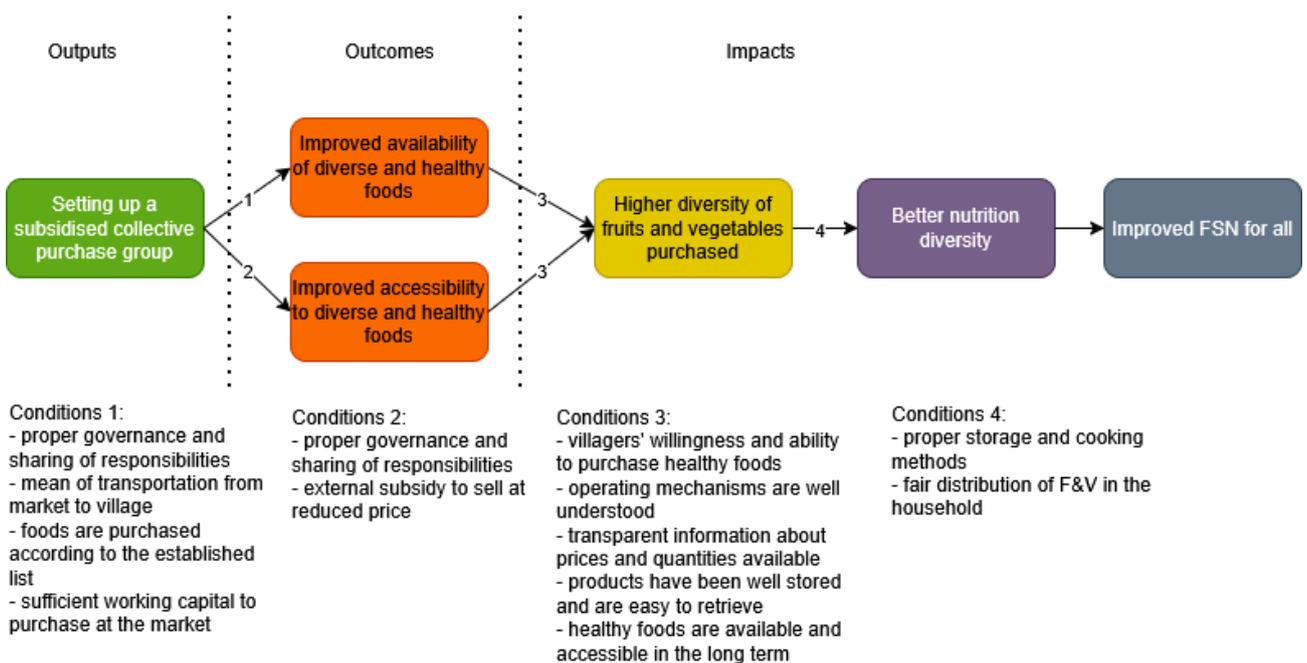
much, is seen as a great opportunity to diversify diets. It contributed to change purchase practices among the community. In Buaknam cluster, families reported that the NSAE project led them to increase their purchase of apples, pears, longans, and long beans, which helped to diversify the diet.

*“When we go to the market, we buy products like soybeans. We never bought soybeans before the project”,* men in Ban Na said during the focus group.

*“Now, we know that fruits are good for the kids so we buy some at the weekly market and keep them in the fridge for a few days.”* Woman in Pouseo village.

However, the same issues as in Ban Na have been raised: without continuous external support, the local community will not be incentivised to purchase healthy foods. Besides, the users of the purchase group also mentioned that they would like to improve the availability and accessibility of foods that have not been targeted by the project, namely eggs, pork, fish, cabbage, green beans, potatoes, cauliflower, mustard leaves (choi sum, etc.), onions, sweet corn, etc. - in other words, the ingredients that they cook on a daily basis.

**Figure 20: Pathway for the creation of a subsidised collective purchase group to achieve desired impacts at scale**



### 3. Conclusion

This report highlights the potential of nutrition-sensitive agroecology approaches to improve dietary diversity among rural populations in Lao PDR, particularly for women and young children. Drawing on a mixed-methods approach that combines quantitative and qualitative surveys, and participatory action research, the NSAE research study shows that constraints to dietary diversity are multidimensional, spanning production limitations (e.g. water access, agronomic knowledge, seasonality), barriers to food access (e.g.

market distance, affordability), and socio-cultural factors shaping consumption practices (e.g. knowledge gaps, time constraints, and childcare practices).

The study highlights the central role of participatory approaches in shaping intervention relevance, community engagement and acquisition of knowledge, and the development of locally grounded and sustainable solutions. Methods such as Photovoice enabled beneficiaries to articulate their own constraints and priorities, thereby fostering ownership and enhancing the likelihood of behavioural change. The results demonstrate that the co-design and implementation of nutrition-sensitive agroecology interventions across multiple domains - agricultural production, food processing and supply, and nutrition education - can generate mutually reinforcing effects.

Given the relatively short duration of the study, the participatory impact pathway analysis primarily capture intermediate outcomes, including improved knowledge and awareness of nutrition among community members, increased availability and diversity of locally produced foods, enhanced technical skills in agroecological practices and food processing, changes in food preparation and feeding practices for young children and farmers' and women's empowerment (through Photovoice, poster creation, theatre forum, and training for health volunteers). The findings of the NSAE study demonstrate that meaningful changes in knowledge, practices, and behaviours can be initiated even within a relatively short timeframe.

However, although the analysis reveals numerous pathways for positive impacts, some findings indicate incremental behavioural changes, which do not suggest a structural change in food consumption. Other more convincing findings show a noticeable change in behaviour -e.g. purchasing more fruits and vegetables, introducing diverse foods in children's diets, but this may simply be the result of an immediate follow-up effect of the intervention reported by the beneficiaries, with no guarantee that this change will continue in the medium or even short term.

Thus, this study also has a number of limitations and challenges that should be noted. First, the short duration of the project limited the monitoring of the interventions and constrains the evaluation to early-stage outcomes, without the possibility of assessing longer-term impacts on dietary diversity or nutritional status. Second, the persistence of structural barriers - such as limited financial resources, competing labour demands, technical constraints, and partial market integration - may limit the sustainability and scalability of the observed changes. Third, variations in adoption across communities point to the importance of local contextual factors, including social organisation, and access to extension services.

These limitations point to the need for a medium-term follow-up of nutrition sensitive agriculture interventions as well as a robust evaluation over a longer period, combining both qualitative and quantitative approaches to better understand change trajectories and scaling conditions. They also underline the role of institutions and public policies in supporting the wider adoption of nutrition-sensitive agroecological interventions.

In conclusion, this study contributes to a better understanding of the mechanisms through which integrated, context-specific interventions based on agroecological principles can improve nutrition in rural contexts. It provides a conceptual and operational framework for the design of future interventions aiming to link agroecological principles and nutrition outcomes.

## References

Douthwaite B, Alvarez B, Cook R, Davies P, George J, Howell R, Rubiano MJ. Participatory impact pathway analysis: a practical application of program theory in research-for-development. *Can J Progr Eval* 2007;22: 127–59.

Mattes, R. D., Rowe, S. B., Ohlhorst, S. D., Brown, A. W., Hoffman, D. J., Liska, D. J., ... & Jackson, E. (2022). Valuing the diversity of research methods to advance nutrition science. *Advances in Nutrition*, 13(4), 1324-1393.

Savy, M., Briaux, J., Seye, M., Douti, M. P., Perrotin, G., & Martin-Prevel, Y. (2020). Tailoring process and impact evaluation of a “Cash-Plus” program: the value of using a participatory program impact pathway analysis. *Current Developments in Nutrition*, 4(7), nzaa099.

## Annex 1. Posters presenting some results of the quantitative survey on dietary diversity in the target villages

Posters on minimum dietary diversity score for women and children 6-23 months, and health risks associated with micronutrient deficiencies (Naseo hamlet, Lao and English version)

NUTRITION SENSITIVE AGRO ECOLOGY (NSAE) RESEARCH STUDY  
RESULTS FROM THE SURVEY IN NASEO

### MALNUTRITION OF CHILDREN UNDER 5



8 children out of 11 children  
(+2 child out of 3)

**Bodies and brains of these children do not develop properly:**

Impact on



The child have problems learning and concentrating



The child have physical problems, risks of diseases



The child is sick more often, more seriously, and have difficulty healing



ໂຄງການສຶກສາລະບົບນິເວດກະສິກໍາ ເພື່ອໂຜ່າຊຸມາການ (NSAE project)

ຜົນໄດ້ຮັບຈາກການຕັບກໍາຂໍ້ມູນຢູ່ບ້ານ ນາແຊວ

### ການຂາດທາດອາຫານຂອງເດັກອາຍຸຕໍ່າກວ່າ 5 ປີ



8 ໃນ ຈໍານວນທັງໝົດ 11 ຄົນ  
(+ 2 ໃນ 3 ຄົນຂອງຈໍານວນເດັກ)

**ຮ່າງກາຍ ແລະ ສະໝອງຂອງເດັກເຫຼົ່ານີ້ບໍ່ພັດທະນາເທົ່າທີ່ຄວນ:**

ຜົນກະທົບໃຫ້



ເດັກນ້ອຍມີບັນຫາໃນການຮຽນຮູ້ ແລະ ສະມາທິສິ້ນ



ເດັກນ້ອຍມີບັນຫາທາງຮ່າງກາຍ, ມີຄວາມສ່ຽງຕິດພະຍາດໄວ



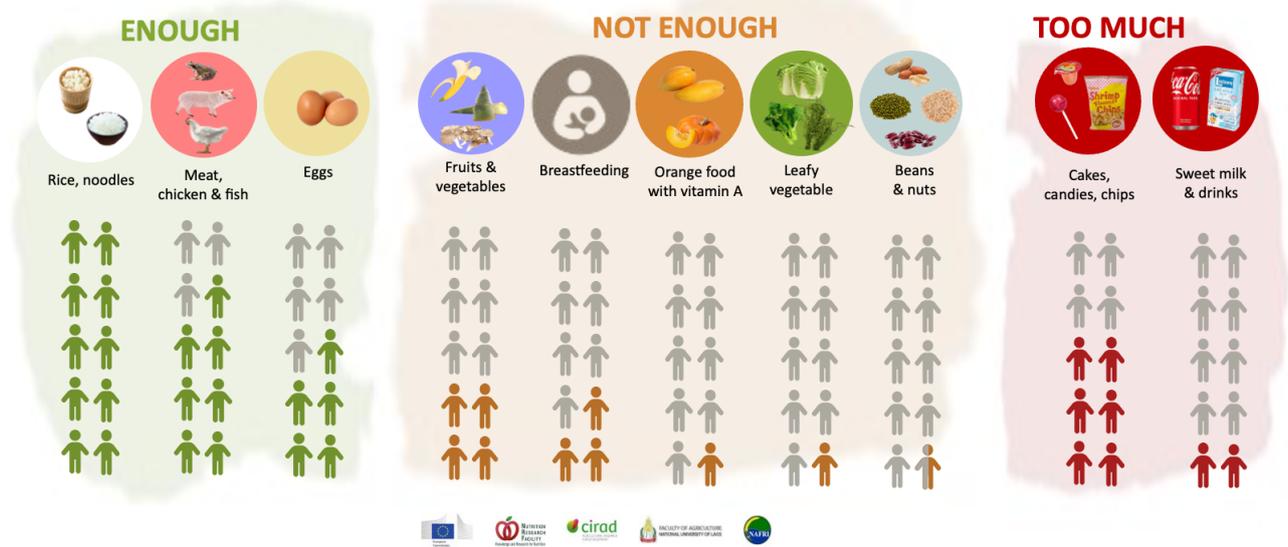
ເດັກນ້ອຍມັກເຈັບໄຂ້ເລື້ອຍໆ, ມີຄວາມຄຽດຫຼາຍຂຶ້ນ, ແລະ ບິ່ນປົວຍາກຂຶ້ນ



Posters on Food groups consumed in English language (Naseo hamlet) and Lao language (Ban Na village): food group consumed in sufficient quantities (green), not consumed in sufficient quantities (orange), and consumed in excess (red).

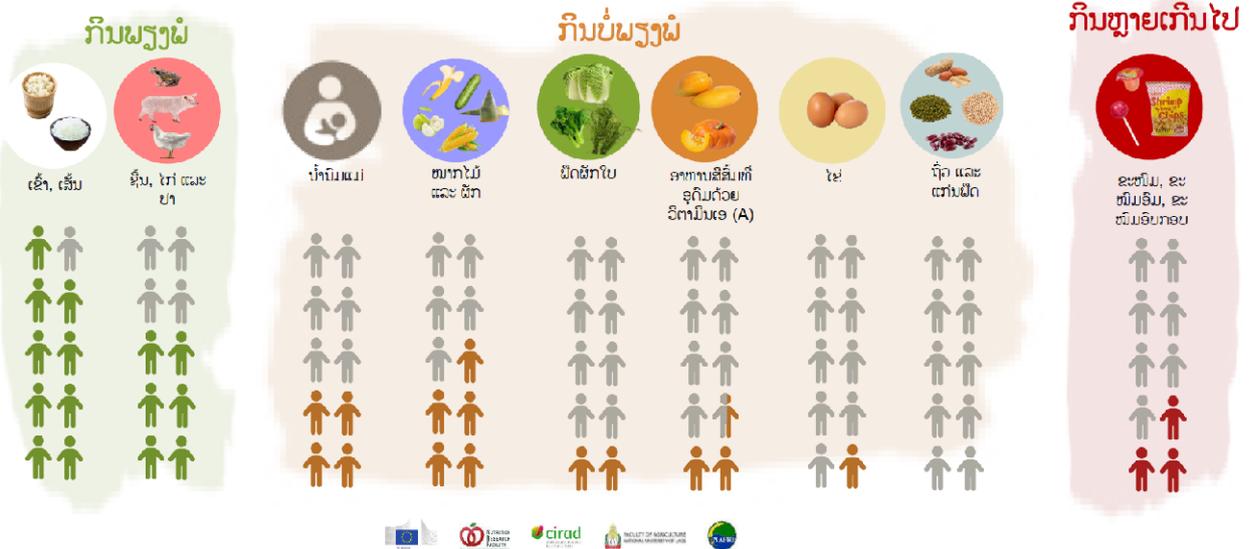
NUTRITION SENSITIVE AGRO ECOLOGY (NSAE) RESEARCH STUDY  
RESULTS FROM THE SURVEY IN NASEO

DIET ISSUES : Only 1 child on 10 eat enough diverse food !



ໂຄງການສຶກສາລະບົບນິເວດກະສິກຳ ເພື່ອໄພຊະນາການ (NSAE project)  
ຜົນໄດ້ຮັບຈາກການເກັບກຳຂໍ້ມູນຢູ່ບ້ານ ນາ

ບັນຫາການກິນອາຫານ: ມີເດັກນ້ອຍພຽງ 1 ຄົນໃນຈຳນວນ 8 ຄົນ ກິນອາຫານຫຼາກຫຼາຍຢ່າງພຽງພໍ



## Annex 2. Support to discuss the interventions during the participatory workshops on interventions



### Access to a healthy diet

because of lack of guidelines, distant market, lack of supply for fresh products in the village, lack of money

Problem:

Solutions	Input, resource, material, training	Timetable

**ການເຂົ້າເຖິງອາຫານສຸຂະພາບ**  
ຍ້ອນຂາດວິທີການແນະນຳ, ຫ່າງໄກຈາກຕະຫຼາດ, ຂາດການສະໜອງ  
ຜະລິດຕະພັນທີ່ສົດໃໝ, ຂາດງົບປະມານໃນການຊື້

ບັນຫາ: - ສູງລາຄາຂອງອາຫານສຸຂະພາບ  
- ວິນາຍາດໄວ້.      ກິດຈະກຳ: ຈັດຊື້, ຈັດຈ້າງ, ກຽມປອດ  
ສາລີ ຫ້ວນ

ວິທີແກ້ໄຂ	ສິ່ງນຳເຂົ້າໃນການຜະລິດ, ຊັບພະຍາກອນ, ອຸປະກອນ, ເຄື່ອງມື, ການຝຶກອົບຮົມ	ຕາຕະລາງເວລາ, ໄລຍະເວລາ
1. ຕັ້ງແຖວປັບປຸງຜົນປະໂຫຍດ (ສາລີ, ສາລີ, ສາລີ)	- ສາລີ, ສາລີ, ສາລີ - ສາລີ, ສາລີ, ສາລີ	1 ມື້ / ອາທິດ
2. ອົບປະມານ	- ອົບປະມານ, ອົບປະມານ - ອົບປະມານ, ອົບປະມານ	1 ວັນ - 1 ວັນ
3. ຕັ້ງແຖວປັບປຸງຜົນປະໂຫຍດ	- ຕັ້ງແຖວປັບປຸງຜົນປະໂຫຍດ - ຕັ້ງແຖວປັບປຸງຜົນປະໂຫຍດ	1 ວັນ (1 ວັນ)
4. ມາລິນ (Mill)	- ມາລິນ, ມາລິນ - ມາລິນ, ມາລິນ	1 ວັນ / 1 ວັນ
5. ກຽມປອດໃຫ້ເດັກນ້ອຍ	- ກຽມປອດໃຫ້ເດັກນ້ອຍ - ກຽມປອດໃຫ້ເດັກນ້ອຍ	1 ວັນ / 1 ວັນ



### Caring and feeding children

due to a lack of time, resources, advice and guidelines

Problem:

Solutions	Input, resource, material, training	Timetable

**ການດູແລແລະການໃຫ້ອາຫານເດັກນ້ອຍ**  
ເນື່ອງຈາກການຂາດເວລາ, ຊັບພະຍາກອນ, ຄຳແນະນຳ ແລະ ແນວນຳວິທີ  
ການປະຕິບັດ

ບັນຫາ:

ວິທີແກ້ໄຂ	ສິ່ງນຳເຂົ້າໃນການຜະລິດ, ຊັບພະຍາກອນ, ອຸປະກອນ, ເຄື່ອງມື, ການຝຶກອົບຮົມ	ຕາຕະລາງເວລາ, ໄລຍະເວລາ
ມີລູກ (ວິທີ)	- ມີລູກ, ມີລູກ - ມີລູກ, ມີລູກ	1 ວັນ, 1 ວັນ
ເລືອກອາຫານທີ່ໄດ້ກວດວິນາຍ	- ເລືອກອາຫານທີ່ໄດ້ກວດວິນາຍ - ເລືອກອາຫານທີ່ໄດ້ກວດວິນາຍ	1 ວັນ, 1 ວັນ
ມີຈຸດປາກົດ - ສາມາດດູແລເດັກນ້ອຍ	- ມີຈຸດປາກົດ, ມີຈຸດປາກົດ - ມີຈຸດປາກົດ, ມີຈຸດປາກົດ	1 ວັນ, 1 ວັນ
ອົບປະມານໃຫ້ເດັກນ້ອຍ	- ອົບປະມານໃຫ້ເດັກນ້ອຍ - ອົບປະມານໃຫ້ເດັກນ້ອຍ	1 ວັນ, 1 ວັນ
ອາຫານທີ່ຈັດຊື້	- ອາຫານທີ່ຈັດຊື້, ອາຫານທີ່ຈັດຊື້ - ອາຫານທີ່ຈັດຊື້, ອາຫານທີ່ຈັດຊື້	1 ວັນ, 1 ວັນ
ເຄື່ອງມືໃຫ້ເດັກນ້ອຍ	- ເຄື່ອງມືໃຫ້ເດັກນ້ອຍ, ເຄື່ອງມືໃຫ້ເດັກນ້ອຍ - ເຄື່ອງມືໃຫ້ເດັກນ້ອຍ, ເຄື່ອງມືໃຫ້ເດັກນ້ອຍ	1 ວັນ, 1 ວັນ



## Growing fruit

because of climate, disease, variety and technical problems

Problem:

Solutions	Input, resource, material, training	Timetable

**ການປູກໝາກໄມ້**  
ເນື່ອງຈາກສະພາບອາກາດ, ພະຍາດ, ແນວມັນ ແລະ ບັນຫາດ້ານເຕັກນິກ

ບັນຫາ:

ວິທີແກ້ໄຂ	ສິ່ງນຳເຂົ້າໃນການຜະລິດ, ຊັບພະຍາກອນ, ອຸປະກອນ, ເຄື່ອງມື, ການຝຶກອົບຮົມ	ຕາຕະລາງເວລາ, ໄລຍະເວລາ
1) ດຶງນໍ້າໃນລະຫວ່າງວັນ (ສູງລູ)	ນໍ້າສະຫງວນໃຫ້ເປັນລະບົບ	ເດືອນ 5
2) ດຶງນໍ້າໃນລະຫວ່າງວັນ (ສູງລູ) ມາດຕະການປ້ອງກັນພະຍາດ	1) ຕາມຄຳສັ່ງຂອງພະຍາດສະໄໝຍາດ 2) ພິຈາລະນາວິທີການປ້ອງກັນ	ເດືອນ 6 ຫຼື 7
3) ຕາມຄຳສັ່ງຂອງລູກມາດຕະການປ້ອງກັນພະຍາດ	1) ຕາມຄຳສັ່ງຂອງພະຍາດສະໄໝຍາດ 2) ພິຈາລະນາວິທີການປ້ອງກັນ	ເດືອນ 8



## Growing vegetables and other crops

because of problems such as lack of water, disease, productivity, variety and technical skills

Problem:

Solutions	Input, resource, material, training	Timetable

**ການປູກພືດຜັກ ແລະ ພືດອື່ນໆ**  
ຍ້ອນບັນຫາຕ່າງໆເຊັ່ນ: ການຂາດນໍ້າ, ພະຍາດ, ຜົນຜະລິດ, ແນວມັນ ແລະ ທັກສະດ້ານເຕັກນິກ

ບັນຫາ:

ວິທີແກ້ໄຂ	ສິ່ງນຳເຂົ້າໃນການຜະລິດ, ຊັບພະຍາກອນ, ອຸປະກອນ, ເຄື່ອງມື, ການຝຶກອົບຮົມ	ຕາຕະລາງເວລາ, ໄລຍະເວລາ
1) ດຶງນໍ້າໃນລະຫວ່າງວັນ (ສູງລູ) ມາດຕະການປ້ອງກັນພະຍາດ	1) ຕາມຄຳສັ່ງຂອງພະຍາດສະໄໝຍາດ 2) ພິຈາລະນາວິທີການປ້ອງກັນ	1) ຕາຕະລາງເວລາ 2) ໄລຍະເວລາ
2) ຕາມຄຳສັ່ງຂອງລູກມາດຕະການປ້ອງກັນພະຍາດ	1) ຕາມຄຳສັ່ງຂອງພະຍາດສະໄໝຍາດ 2) ພິຈາລະນາວິທີການປ້ອງກັນ	ເດືອນ 5
3) ຕາມຄຳສັ່ງຂອງລູກມາດຕະການປ້ອງກັນພະຍາດ	1) ຕາມຄຳສັ່ງຂອງພະຍາດສະໄໝຍາດ 2) ພິຈາລະນາວິທີການປ້ອງກັນ	ເດືອນ 6 ຫຼື 7

# Annex 3. Examples of technical sheets produced, used and disseminated by the NSAE project team for technical assistance on fruit trees pruning, pest and diseases control

## Pruning fruit trees to enhance yield and prevent pests and diseases

Pruning is a critical practice that ensures optimal tree structure easier to harvest, sustains long-term productivity, and minimizes disease development. Regular annual pruning is recommended for most fruit trees, including citrus, guava, plum, apple, and mango, as it is both practical and highly effective for maintaining tree health and yield.

### Prune a bit every year

Cut 1 cm above the bud  
Bud pointing outside  
Main branch or trunk  
Year 1 Year 2 Year 3  
Clean and disinfect tool between trees

### Keep the canopy aerated to prevent diseases

Prune the lower branches to prevent disease contamination from the soil  
> 80cm

### Prune to renew the trees

1. Remove the dead branches  
2. Strong pruning to rejuvenate the trees  
Every 5 year if trees are too big

Credit: FAO, Theodor G. G. / FAO / CC BY-NC-ND / IANIGLA

## ການຕັດແຕ່ງກິ່ງງາໄມ້ໃຫ້ໝາກ ເພື່ອເພີ່ມຜົນຜະລິດ ແລະ ປ້ອງກັນແມງໄມ້ສັດຕູພືດ ແລະ ພະຍາດພືດ

ການຕັດແຕ່ງກິ່ງງາໄມ້ໃຫ້ໝາກ ແມ່ນເປັນວິທີການທີ່ສໍາຄັນ ເຊິ່ງຈະຊ່ວຍເຮັດໃຫ້ໂຄງສ້າງຂອງຕົ້ນໄມ້ແຂງແຮງ ເຮັດໃຫ້ເວລາເກັບຖະໜົນຜະລິດໄດ້ສະດວກ ແລະ ງ່າຍຂຶ້ນ ບອກຍິ່ງຊ່ວຍຝືມປະສິດທິພາບໃນການປົກປ້ອງຕົ້ນໄມ້ໄວ້ຈາກພະຍາດ ແລະ ທູດຜ່ອນການເກີດພະຍາດພືດ. ພະນັກທີ່ຕັດແຕ່ງກິ່ງງາ ເປັນປະຈຳທຸກປີ ໂດຍສະເພາະໄມ້ໃຫ້ໝາກເຊັ່ນ: ໝາກກ້ຽງ (citrus), ໝາກສິດາ (guava), ໝາກພື້ນ (plum), ໝາກອັນເປັນ (apple) ແລະ ໝາກມ່ວງ (mango). ເຊິ່ງເປັນວິທີທີ່ສາມາດປະຕິບັດໄດ້ງ່າຍ ແລະ ມີປະສິດທິພາບສູງ ໃນການຮັກສາຕົ້ນໄມ້ໃຫ້ແຂງແຮງ ແລະ ໄດ້ຮັບຜົນຜະລິດສູງ.

### ການຕັດແຕ່ງກິ່ງງາຕົ້ນໄມ້ ໃນທຸກປີ

ດັດແຕ່ງກິ່ງງາ ທີ່ຊ້າກວ່າກວາງ ຕັດລຳດັບແຕ່ 1 ຊຸມ ອອກ  
ກິ່ງງາ ຫຼື ສົ້ນ  
ປີທີ 1 ປີທີ 2 ປີທີ 3  
ທໍາຄວາມສະອາດ ແລະ ຊ້າເຊື້ອ ອຸປະກອນ ກ່ອນຕັດແຕ່ງກິ່ງງາໃໝ່

### ການຮັກສາຊົງຝຸ່ມຕົ້ນໄມ້ໃຫ້ໂລ່ງ ເພື່ອໃຫ້ອາກາດຖ່າຍເທ ແລະ ປ້ອງກັນພະຍາດພືດ

ດັດແຕ່ງກິ່ງງາໄມ້ ທາງຊຸ່ມອອກ ເພື່ອ ປ້ອງກັນການປົນ ເປື້ອນຂອງພະຍາດ ສັດໄມ້ຕົ້ນ  
> 80cm

### ການຕັດແຕ່ງກິ່ງງາ ເພື່ອຟື້ນຟູຕົ້ນໄມ້

1. ດັດກິ່ງທີ່ແຫ້ງ ຕາຍອອກ  
2. ສາມາດຕັດແຕ່ງກິ່ງງາອອກໄດ້ຈຳນວນຫຼາຍ ເພື່ອຟື້ນຟູຕົ້ນໄມ້ໃຫ້ອອກກິ່ງໃໝ່  
ທຸກ 5 ປີ ຖ້າຕົ້ນໄມ້ ໃຫຍ່ຫຼາຍ

Credit: FAO, Theodor G. G. / FAO / CC BY-NC-ND / IANIGLA

## Manage banana plants to prevent diseases and increase production

Bananas are a highly nutritious food that can be produced year-round. To maintain sustainable and efficient production with minimal effort, applying a few key management techniques is essential.

### Do not take suckers in infected banana plants



When planting bananas, always select suckers from healthy, disease-free mother plants



Fusarium wilt of banana can spread by soil and plants

## ການຈັດການຕົ້ນກ້ວຍ ເພື່ອປ້ອງພະຍາດພືດ ແລະ ການເພີ່ມຜົນຜະລິດ

ກ້ວຍ ເປັນອາຫານທີ່ມີຄຸນຄ່າທາງໂພລະນາການສູງ ເຊິ່ງສາມາດຜະລິດໄດ້ຕະຫຼອດປີ. ເພື່ອຮັກສາການຜະລິດໃຫ້ຍືນຍົງ ແລະ ມີປະສິດທິພາບ ໂດຍໃຊ້ແຮງງານໜ້ອຍ, ຄວນນຳໃຊ້ຕັກນິກການຈັດການທີ່ສຳຄັນບາງຢ່າງມາໃຊ້ຈຶ່ງເປັນສິ່ງທີ່ຈຳເປັນ.

### ບໍ່ຄວນນຳຕົ້ນກ້ວຍທີ່ຕິດເຊື້ອພະຍາດໄປປູກ



ຕົ້ນກ້ວຍທີ່ຕິດພະຍາດ

ເມື່ອເວລາຈະນຳເອົາຕົ້ນກ້ວຍໄປປູກ, ຄວນເລືອກຕົ້ນກ້ວຍທີ່ສູງແຂງແຮງ ແລະ ບາງສະຈາກເຊື້ອພະຍາດພືດ



ພະຍາດຫຼຸ່ງເຫຼືອງຂອງກ້ວຍສາມາດແຜ່ກະຈາຍໄປຍັງ ຕົ້ນ ແລະ ຕົ້ນກ້ວຍ

### Keep only 2 suckers per mother banana plant



Keep only 2 suckers per mother plant to optimize growth  
Select suckers of different sizes to ensure year-round production



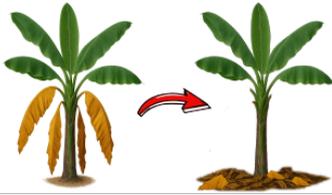
### ໃຫ້ຮັກສາຕົ້ນກ້ວຍ ພຽງ 2 ຫນ່ ຕໍ່ຕົ້ນແມ່



ຮັກສາຕົ້ນກ້ວຍໄດ້ພຽງ 2 ຫນ່ຕໍ່ຕົ້ນແມ່ ເພື່ອໃຫ້ຕົ້ນກ້ວຍຈະເລີນເຕີບໂຕໄດ້ດີ  
ຄັດເລືອກຕົ້ນກ້ວຍທີ່ມີຂະໜາດຕາກຕາກກັນ ເພື່ອຮັບປະກັນໃຫ້ໄດ້ຮັບຜົນຜະລິດຕະຫຼອດປີ



### Cut old leaves



Cut banana leaves can be used as mulch to cover the soil, for example in vegetable beds



ໃບກ້ວຍທີ່ຄັດອອກແລ້ວສາມາດນຳມາໃຊ້ເປັນຝຸ່ນ ໃນການຄຸມໜ້າດິນຕ່າງໆ ໃນເນື້ອທີ່ປູກວັດ



## ເຕັກນິກງ່າຍໆ ໃນການເຮັດໃຫ້ດິນພືດແຂງແຮງ

ພືດເຜັກ ເຊັ່ນ: ກະລຳປີ, ໝາກເລີນ ແລະ ໝາກເຂືອ ມັກຈະຖືກທຳລາຍຈາກແມງໄມ້ສັດຕູພືດ ແລະ ພະຍາດພືດ. ການນຳໃຊ້ຫຼັກການກະສິກຳທີ່ດີ, ສາມາດຫຼຸດຜ່ອນຄວາມເສຍຫາຍ ແລະ ຮັບປະກັນການຜະລິດອາຫານທີ່ມີຄຸນນະພາບດີ ແລະ ປອດໄພ.

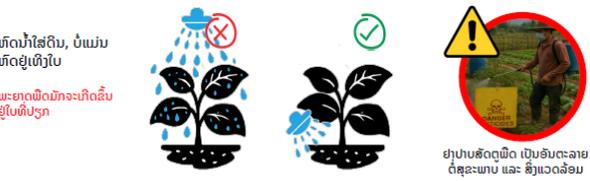
### ການປ້ອງກັນ ແລະ ການປັບປຸງດິນ



### ປູກພືດແບບປະສົມປະສານ ແລະ ອະນຸລັກຄວາມຫຼາກຫຼາຍທາງຊີວະນາໆພັນ



### ໃຊ້ນ້ຳໃຫ້ເກີດປະໂຫຍດສູງສຸດ



Annex 4. Posters designed by the community to convey understandable messages on food diversity and nutrition issues.

**ຜົນກະທົບຂອງການບໍ່ໄດ້ກິນອາຫານຄົບໝວດໝູ່ ຫຼື ບໍ່ພຽງພໍ**



**1** ແມ່ຍິງບໍ່ໄດ້ກິນອາຫານຄົບໝວດໝູ່ ຫຼື ບໍ່ພຽງພໍຈະເຮັດໃຫ້ຮ່າງກາຍຈ່ອຍຜອມ, ຜິດພົນເຫຼືອງ ແລະ ບໍ່ແຂງແຮງ, ເຮັດໃຫ້ບໍ່ມີນົມໃຫ້ລູກກິນພຽງພໍເຮັດໃຫ້ລູກບໍ່ມີສຸຂະພາບແຂງແຮງ ຫຼື ອ່ອນເພຍ ແລະ ມັກມີອາລົມງຸດ.





**2** ແມ່ທີ່ໄດ້ກິນອາຫານຄົບໝວດໝູ່ຈະເຮັດໃຫ້ຜິວພັນງາມ ແລະ ຕັຍດີ, ມີສຸຂະພາບແຂງແຮງດີ, ມີນ້ຳນົມພຽງພໍໃຫ້ລູກກິນເຮັດໃຫ້ລູກມີການຈະເລີຍເຕີບໂຕໄວ ແລະ ແຂງແຮງດີ, ໄປໄຮ່ໄປສວນຄວນໃຫ້ນົມລູກເປັນປົກກະຕິ.



**ຫົວຂໍ້ແນະນຳ:** ແມ່ ແລະ ລູກທີ່ຂາດສານອາຫານຄວນເອົາລູກນ້ອຍຂອງທ່ານໄປຕິດຕາມການຈະເລີນເຕີບໂຕ ແລະ ພັດທະນາການຂອງເດັກຢູ່ສຸກສາລາລາດຄອຍ.



ແຕ້ມໂດຍ: ຫົວໜ້າແມ່ຍິງ ນ.ໂມກີ ບ້ານນາ

**The effects of an incomplete or insufficient diet**



**1** A woman who does not eat a balanced and sufficient diet becomes thin, looks unhealthy, and loses strength. This leads to a lack of breast milk for her child, which means that the child is not healthy, becomes weak, and is often irritable.





**2** A mother who eats a balanced diet will have beautiful skin, a good constitution, and robust health. She will have enough milk for her child, which will promote rapid and healthy growth. Even when she goes to work in the fields or garden, she should try to continue breastfeeding normally.



**Tip:** Mothers and children who are malnourished should take their children to the village health center to closely monitor their growth and development.



Written by: Women's Leader Mrs. Maiku, Bah Na



ພາຍຫຼັງເດັກມີອາຍຸ ໒ ເດືອນຜູ້ເປັນແມ່ຕ້ອງເອົາອາຫານໃຫ້ລູກກິນໃຫ້ຄຸ້ບ ໒ ໝວດ ມາບົດ, ຕົ້ມໃຫ້ເປື້ອຍ ຫຼື ຕຳໃຫ້ໝຸ່ນໆ ເອົາໃຫ້ເດັກກິນ ແລະ ແມ່ຕ້ອງສືບຕໍ່ເອົານົມໃຫ້ລູກກິນຈົນຮອດ 2 ປີ ເພື່ອໃຫ້ເດັກມີຄວາມຈະເລີນເຕີບໂຕ ແລະ ແຂງແຮງດີ.



ແຕ້ມໂດຍ: ຫົວໜ້າແມ່ຍິງ ນ.ໂມກີ ບ້ານນາ



After the age of 6, mothers should give their children a diet that includes all 6 food groups. Food should be mashed, boiled until tender, or finely chopped before being given to children. Mothers should continue breastfeeding until the age of 2 to ensure their children's healthy growth and development. The six food groups:



Written by: Head of Women Ms. Maiku, Bah Na

## ສ້າງຄວາມຊື່ນເຄີຍໃຫ້ເດັກກິນອາຫານ



ເດັກອາຍຸ 6-12 ເດືອນ ພໍ່ແມ່ສາມາດເອົາອາຫານທີ່ມີໃນທຸກຄາບເຂົ້າປະຈຳວັນຂອງຄອບຄົວມາບົດ ຫຼື ຕົ້ມໃຫ້ເປື້ອຍໃຫ້ເດັກສາມາດກິນໄດ້ ແລະ ນຳມາປັອນໃຫ້ເດັກກິນລວມທັງເຂົ້າ, ໝາກໄມ້, ຜັກ ແລະ ຊີ້ນ.



ແຕ້ມໂດຍ: ຫົວໜ້າແມ່ຍິງ ນ.ໄມກີ ບ້ານນາ

## Getting children used to eating food



For children aged 6 to 12 months, parents can use foods that are part of the family's daily meals, mashing or boiling them until they are soft so that the child can eat them. This includes rice, fruit, vegetables, and meat.



written by: Women's Leader Ms. Maiku, Ban Na

# ອາຫານຫຼາກຫຼາຍ: ກຸ່ມແຈສູ່ສຸຂະພາບທີ່ດີ

ການກິນອາຫານທີ່ມີຄວາມຫຼາກຫຼາຍແມ່ນສິ່ງສໍາຄັນຢ່າງຍິ່ງຕໍ່ສຸຂະພາບ ແລະ ຄວາມເປັນຢູ່ທີ່ດີຂອງຄົນເຮົາ. ບໍ່ວ່າຈະເປັນເດັກນ້ອຍ, ໄວໜຸ່ມ, ຜູ້ໃຫຍ່, ຫຼືຜູ້ສູງອາຍຸ, ທຸກຄົນລ້ວນແຕ່ໄດ້ຮັບຜົນປະໂຫຍດຈາກການບໍລິໂພກອາຫານທີ່ແຕກຕ່າງກັນ.

ເຂົ້າ, ເສັ້ນເຂົ້າປຸ້ນ, ມັນດໍາງ, ເຜືອກ, ມັນຕົ້ນ, ສາລີ ຊຶ່ງເປັນແຫຼ່ງພະລັງງານຫຼັກ

## ໝວດທາດແປ້ງ ເຊັ່ນ



ໃຫ້ວິຕາມິນ, ແຮ່ທາດ, ແລະ ເສັ້ນໄຍ (ໝາກກ້ວຍສຸກ, ໝາກນັດສຸກ). ເຮົາຄວນເລີ່ມໃຫ້ເດັກນ້ອຍກິນຝັກຕັ້ງແຕ່ອາຍຸ 6 ເດືອນ, ແຕ່ຄວນບົດລະອຽດກ່ອນຈຶ່ງໃຫ້ເດັກກິນ.

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## ໝວດຝັກ



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## ໝວດທາດແປ້ງ ເຊັ່ນ



ເປັນແຫຼ່ງໂປຣຕີນສໍາລັບການສ້າງເນື້ອເຍື່ອ ແລະ ການເຕີບໃຫຍ່

## ໝວດຊີ້ນ, ປາ, ໄຂ່, ຖົ່ວ



ມັນເປັນສິ່ງສໍາຄັນທີ່ເດັກນ້ອຍຄວນກິນຝັກ ແລະ ໝາກໄມ້ຢ່າງນ້ອຍຢ່າງລະໝີງອັນຕໍ່ມື ຫຼື ຫຼາຍກວ່ານັ້ນ !

ໃຫ້ແຄລຊຽມ ແລະ ສານອາຫານອື່ນໆ (ນໍ້າມັນພືດ ແລະ ມັນຊີບໝູ)



## ໝວດໄຂມັນສັດ ແລະ ນໍ້າມັນພືດ

## Annex 5. Matrix for an evaluation of interventions and mapping of impact pathways

N	Name of the intervention	Sub-intervention	Village	Data collected		
				Description of the implementation	Collective action	Outcomes and long-term evolution
1	Agroecological Demo plots	Training on agroecological techniques Technical assistance to farmers PAFO support for seed provision	Ban Na Pouseo	<ul style="list-style-type: none"> <li>- surface</li> <li>- types of species planted</li> <li>- number of plants / kg of seeds for each species</li> <li>- harvesting calendar for each species</li> <li>- expected quantities produced for each species</li> </ul>	<ul style="list-style-type: none"> <li>- number of villagers involved in planting, sowing, weeding...</li> <li>- decision-making process about labour (planting, weeding, harvesting...)</li> <li>- ownership of and access to the land</li> <li>- rules to use the land</li> <li>- rules for the distribution of the products harvested</li> </ul>	<ul style="list-style-type: none"> <li>- post harvest: use of the product harvested (direct consumption, collective meals, storage, process, % of seeds collection...)</li> <li>- future use of the land: Same use as previously, or adaptation by changing the type of product, or by reducing/increasing the surface area or number of plants for some products? If adaptation, which products are affected by the changes?</li> <li>- scaling ? replicable in other collective or private plots, uplands, etc.?</li> <li>- plan of action for the next harvest on this plot (resources for seeds, labour, etc.)</li> </ul>
2	Water distribution system	Technical assistance for water governance PAFO support for construction material and technical assistance to set the water distribution network	Ban Na Buaknam Naseo	<ul style="list-style-type: none"> <li>-water governance system</li> <li>- people in charge of managing the system</li> <li>- present use</li> </ul>	<ul style="list-style-type: none"> <li>- rules for the use of water (limited volume / HH? In case of water shortage? Rules to avoid water abuse and loss...)</li> <li>- responsibilities and resources for maintenance</li> </ul>	<ul style="list-style-type: none"> <li>- number of villagers (Households) benefitting</li> <li>- estimation of the number of hectares irrigated</li> <li>- type of crops irrigated</li> </ul>

N	Name of the intervention	Sub-intervention	Village	Description of the implementation	Collective action	Outcomes and long-term evolution
3	Purchase cooperative	Workshops to establish the purchasing groups, including voucher system PAFO support to provide healthy food	Ban Na Phou Seo	<ul style="list-style-type: none"> <li>- quantity and type of products supplied (cf follow up table)</li> <li>- number of households who purchased from the cooperative</li> <li>- total financial contribution by households</li> </ul>	<ul style="list-style-type: none"> <li>- rules and responsibilities for operation of the cooperative</li> <li>- knowledge, acceptance, negotiation of rules by households</li> <li>- filling of the table by the manager</li> <li>- difficulties met</li> </ul>	<ul style="list-style-type: none"> <li>- plans for sustained operation of the cooperative (resources, fundings, roles, etc.)</li> <li>- calendar for future actions</li> <li>- behavioural changes regarding healthy foods</li> <li>- If they intend to stop this intervention: main reasons?</li> </ul>
4.1	Processing	Technical training on food processing PAFO intervention to upgrade the milling machine	Ban Na	<ul style="list-style-type: none"> <li>- frequency of use by households after the intervention (upgrading)</li> <li>- Type of product dried</li> <li>- types of use (grains milled, etc.)</li> <li>- Estimation of quantities (Volume/week/month)?</li> </ul>	<ul style="list-style-type: none"> <li>- rules and resources for use (cleaning, maintenance, etc.)</li> <li>- persons in charge of supervision</li> </ul>	<ul style="list-style-type: none"> <li>- variation in frequency since upgrading (before/after)</li> <li>- If no change in the frequency of use (before/after): why?</li> <li>- future uses of the mill</li> <li>- variations in the types of uses</li> <li>- future uses of the mill</li> </ul>
4.2	Processing	Training on drying	Ban Na Phou Seo	<ul style="list-style-type: none"> <li>- type of trainings on processing</li> <li>- skills acquired by villagers</li> <li>- equipment provided?</li> <li>- Type of product dried</li> <li>- Quantities / month/ year (expected)?</li> <li>- Storage? (storage conditions -? During how many months?)</li> </ul>	<ul style="list-style-type: none"> <li>- rules, responsibilities and resources to use and maintain the dryers</li> </ul>	<ul style="list-style-type: none"> <li>- more intensive use planned? (Increase in the number of products? Increase in frequency of use? Increase in the number of households using the device?)</li> <li>- changes in practices after training</li> <li>- difficulties in changing practices and reasons why (time, resources, habit...)</li> </ul>

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N	Name of the intervention	Sub-intervention	Village	Description of the implementation	Collective action	Outcomes and long-term evolution
5	Fruit trees diseases treatment and pruning	Technical sheets ; trainings	Ban Na Buaknam Na Seo	Technical training	- How many people took part? Do you intend to share what you have learnt with other people who could not attend the training?	What did you learn? Did you apply to other trees after the training? How many trees? If not, do you intend to apply?
6	Study tour	Farmers to farmers meeting, farms' visits	Ban Na Buaknam Na Seo	Farmers to farmers exchange of knowledge	- How many people took part?	What did you learn? Did you apply the knowledge shared to your own plot after the field trip? If not, do you intend to apply?
7	Nutrition awareness	Posters, cooking classes, volunteer training	Ban Na Buaknam Na Seo	Participatory workshops to develop posters and videos for social media, based on existing communication and awareness-raising materials (Ministry of Health, WFP, SUN)	- How many people took part? How many mothers? How many men? - How many people were present during the poster and video presentations? (men and women) - Did you learn anything about nutrition for young children? - If so, what information was most useful to you? - Did you learn anything about nutrition for adults? - If so, what information was most useful to you? - Did you find the workshop fun/creative? - Did you find the workshop suited to your information needs? Did the workshop bring you any other positive things? - Was there anything you didn't like about the workshop?	- Did you share the videos on Facebook? On TikTok? - If so, who did you share the videos with? (family, friends, how many people) - If so, how many views did you get? How many "likes"? Did you get any feedback (via message or directly)?- Have you made any changes to your diet or, more generally, to your habits since the workshop? - Did the workshop allow you to talk with other participants (friends, neighbours, etc.) about topics you had never discussed before, such as food, nutrition or caring for young children? - Have you discussed the workshop and the information you learned about food, nutrition or caring for young children with others (family, friends, neighbours, etc.)?

N	Name of the intervention	Sub-intervention	Village	Description of the implementation	Collective action	Outcomes and long-term evolution
8	Recipes for kids	Workshops	Ban Na Buakn am Na Seo	Cooking workshops featuring recipes for young children, mainly vegetable purées and fruit compotes, which are simple and quick to prepare and made from locally available and/or accessible foods.	<ul style="list-style-type: none"> <li>- How many people took part? How many mothers? How many grandmothers? How many children?</li> <li>- Did your child like the recipes? Which ones in particular? The vegetable mash? Which vegetables? The compotes?</li> <li>- Did you learn anything? If so, what?</li> <li>- Are the ingredients used in the recipes available and accessible to you?</li> <li>- Do the recipes seem easy to make?</li> <li>- Do the recipes seem quick to make?</li> <li>- Do the recipes seem suitable for children's nutritional/health needs?</li> <li>- Do the recipes seem suitable for children's tastes?</li> <li>- Do you have any other feedback on the recipes or cooking workshops: positive or negative?</li> </ul>	<ul style="list-style-type: none"> <li>- Have you tried any of the recipes since the workshops? Which ones?</li> <li>- Have you used the strainer since the workshops to make vegetable mash or fruit compote?</li> </ul>

N	Name of the intervention	Sub-intervention	Village	Description of the implementation	Collective action	Outcomes and long-term evolution
9	Nutrition relays /referents	Trainings	Ban Na Buakn am Na Seo	Training of village health volunteers and staff at the nearest health centre on basic nutrition information and good practices for monitoring malnutrition (stunting, wasting), including the provision of measuring tapes and scales.	<ul style="list-style-type: none"> <li>- How many people have been trained in monitoring the nutritional status of young children?</li> <li>-Who (village chief/health volunteer/PAFO/health centre staff, etc.)?</li> <li>- How many children's nutritional status was monitored? How often?</li> <li>- How many children were identified as stunted? Wasted?</li> <li>- When your children were born, would you have liked to be able to weigh and measure them in the village every week to monitor their health/nutrition?</li> <li>- Would you have liked to be able to weigh and measure your children in the village regularly (once a month) to monitor their health/nutrition?</li> </ul>	<ul style="list-style-type: none"> <li>- Since the training, have you (trained people: health volunteer, etc.) monitored the nutritional status of other children?</li> <li>- For parents: if your child has been identified as stunted/wasted,</li> <li>- Have you visited the health centre?</li> <li>- Have you changed their diet?</li> <li>- Have you changed any other feeding or care practices?</li> <li>- If this is possible in the village, will you weigh and measure your child(ren) regularly to monitor their health/nutrition?</li> <li>- How often: Only if you see that they are ill? Or regularly? Once a month? Every three months? Every six months?</li> </ul>

the 1990s, the number of people in the world who are illiterate has increased from 1.2 billion to 1.5 billion.

There are many reasons for this. One is that the population of the world is growing so fast that the number of children who are illiterate is increasing. Another reason is that the number of people who are illiterate is increasing in many countries, especially in the developing world. This is because many people are still living in poverty and do not have access to education.

There are also many people who are illiterate because they do not have access to education. In many countries, especially in the developing world, there are not enough schools and teachers to provide education for all children. This is especially true in rural areas where there are often no schools at all.

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