



Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity



Nutrition Basics Training Manual



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



Nutrition Basics Training Manual

By: Nutrition Center, Ministry of Health and SNV

**Support by: SNV
October 2023**

Foreword

Lao PDR is amongst the top countries with the highest malnutrition rate in comparison to other ASEAN countries. A 33% of stunting rate (chronic malnutrition), 9% acute wasting rate, and 21% underweight rate (LSIS 2017) are caused by prolonged inadequate nutrient intake. This is also because children under 6 months old are not exclusively breastfed until 6 months old and not receiving sufficient, diverse supplementary nutritious food that is age appropriate. Only 26% of under-2-children receive minimally accepted level of diet.

Malnutrition is a complex development issue with interrelated causes and consequences. Nutrition has to do with large, globally influenced regional and national food systems, including agricultural production, food distribution, food security, and food safety. Schools - that reach into every community in the country and influence the development of children, their parents, and their community – have a key role to play.

Malnutrition is “hidden hunger.” A high malnutrition rate among the population requires urgent actions. This negatively affect a national health system and national socio-economic growth. A high malnutrition rate requires dietary change and food preferences amongst the general population, which requires broad actions to reduce malnutrition. National Strategy and Plan of Action on Nutrition (2021-2025) that puts an emphasis on a convergence approach to address nutrition problems in the country indicates a government’s intervention to achieve Sustainable Development Goal 2: “end hunger, achieve food security and improve nutrition, and promote sustainable agriculture.”

For nutrition in Lao PDR, the Ministry of Health – through its departments and centers in collaboration with development partners – has implemented several nutrition interventions by focusing on dietary and nutritional diversification, particularly amongst 06 groups: carbohydrate; vegetables; fruit; meat, fish, egg, and alternative plants; calcium; animal fat and vegetable oil. Therefore, there is a need for malnutrition prevention related manuals that are aligned with the World Health Organization’s recommendations and global best practices to ensure that malnutrition prevention measures are implemented throughout different health systems and sectors in a consistent and continuous manner at all levels within continuum of care and amongst all partners to ensure optimal achievements.

National Nutrition Center under Department of Hygiene and Health Promotion of the Ministry of Health has developed “**Nutrition Basics Training Manual**” to provide guidance for national nutrition promotion and other interventions for health workers in hospitals, district hospitals, health centers, including schoolteachers and development partners.

Such manual has been developed by *Enhancing Nutrition of Upland Farming Families (ENUFF)* project of SNV for National Nutrition Center of the Ministry of Health.

About SNV:

SNV is a global development partner driven by its missions suitable to the contexts where we work. We contribute to Sustainable Development Goals (SDGs) through effective actions by focusing on agri-food, energy, and water to enable more sustainable and equitable lives of all people. For more information, visit www.snv.org

I would like to extend my appreciation to all stakeholders and development partners for contributing to the development of this manual. I hope that this can translate malnutrition interventions into practical implementation nationwide, achieving indicators endorsed by the National Assembly and targets under Sustainable Development Goals (SDGs).

Vientiane Capital, .../...../.....
Director General of the Department of Hygiene and Health Promotion



ດຣ. ພອນປະເສີດ ອຸ່ນາພິມ
Dr. Phonepaseuth.OUNAPHOM

Dr. Phonepaseuth.OUNAPHOM

Acknowledgment

Nutrition Center would like to give thanks to everyone from the Department of Hygiene and Health Promotion, Nutrition Center, Mother and Child Central Hospital, Centre of Information and Education for Health, Water and Environment Service Center, Department of Health Care and Rehabilitation, Lao Tropical and Public Health Institute, Ministry of Education and Sport, Ministry of Lao Women Union, Ministry of Forest and Agriculture, from Houaphan and Oudomxay provinces and development partners who have contributed in developing and improving this manual.

Specifically, thank you to the main team members for their input in planning, outlining, editing, and organizing a number of discussion meetings. Department of Hygiene and Health Promotion team: Dr. Phonpaserth Ounaphom, Deputy-General Director of Department of Hygiene and Health Promotion, who has been closely providing guidance, team members from Nutrition Center, Dr. Phonsavanh Keonakorn, Director of Nutrition Center, Deputy Director of Nutrition Center, Dr. Bounyord Mounkhalack, Dr. Vilasith Mukhasith, Deputy Director or Training Department, and technical staff from Nutrition Center: Dr. Phaengsy Sengmany, Dr. Bounthippaphone Phouthichai, Dr. Khampian Phetlavanh, Dr. Nunthaphone Manilath.

INGO staff team: Ms. Priyanka Basnet and Dr. Boualaphanh, Nutrition Advisors, Ms. Pantavanh Keobolith, Communication Officer from SNV organization for providing support in technical and funding on organizing a number of meetings, including the printing of the manual.

Vientiane Capital, .../...../.....
Director of Nutrition Center



Dr. Phonsavanh KEONAKHONE

Introduction

This training manual is prepared by SNV on behalf of the National Nutrition Center to provide information on the basics of nutrition to nutrition coordinators (national, provincial, district) and personnel working on nutrition (provincial, district). The training will meet the strategic objective of the Nutrition Plan of Action 2021-2025: Strengthen human resources (Multisectoral).

There are a total of six sessions. These sessions seek to build knowledge of the basic concepts of nutrition and the multisectoral nature of nutrition. The sessions are arranged in a suggested order, as some build knowledge gained from the previous sessions. Each session includes a time allocation, learning objectives, materials needed, and activities to generate discussion.

Table Content

Foreword	2
Acknowledgment	4
Introduction	5
Session 1: Nutrition Basics.....	7
Nutrition	7
Nutrients.....	7
Understanding Food Functions	9
Session 2: Nutrition Requirements Throughout the Lifecycle	11
Definition	11
The Food Flag	11
Nutrition During the Lifecycle	12
Nutrition during pregnancy and lactation	13
Nutrition for Breastfeeding Women	14
Nutritional requirements for Infants below 6 months	15
Nutritional requirements for children 6 to 23 months	16
Nutritional requirements for Preschool children	17
Nutritional requirements for children 6-13 years	18
Nutritional requirements in Adolescence	19
Nutritional requirements in Adulthood (19 years and above)	20
Session 3: Malnutrition	24
Definitions.....	24
Under-Nutrition	25
Causes of Undernutrition.....	26
Cycle of Undernutrition	29
Consequence of undernutrition	30
Micronutrient-related malnutrition.....	30
Overweight and obesity	31
Diet-related noncommunicable diseases.....	31
Session 4: Nutrition Interventions.....	32
Session 5: Nutrition Information of Laos	34
Session 6: Global and National Nutrition Goals	35
Sustainable Development Goals	35
The National Nutrition Strategy & Plan of Action 2016-2025	36
National Plan of Action on Nutrition (NPAN) 2021-2025.....	37
Multi-Sectoral Nutrition Coordination Platform in Lao PDR.....	39
Annex	40

Session 1: Nutrition Basics

1. Learning Objectives: At the end of the session participants are expected to know the definition of nutrition, the different types of nutrients and their function.

2. Content:

- Definition of Nutrition
- Importance of nutrients
- Understanding Food Function
- Functional categories of nutrients

3. Time: 60 mins

4. Materials Needed: Flip chart board, Flip Chart, Marker Pens, scotch tape, Food Cards, PowerPoint presentation, Computer, LCD projector.

5. Training Method

- Lecture based instruction, Group discussion, Q&A session.

★ Activity 1.1:

- Present the objective of the session.
- Ask at least three participants their understanding of the concepts below:
 - What is nutrition?
 - What are some of the common nutrient groups?
 - What are micronutrients?
 - What are some local food sources of the common nutrient groups?
- After the participants provide the responses, the facilitator moves forward to provide the right definition and details as provided in the session technical notes below.

Nutrition

Nutrition is the process by which a person takes in food to maintain life, grow and support the functioning of organs and tissues. The branch of science that studies these processes.

Nutrients

Nutrients are substances essential for health that the body cannot make or that it makes in quantities too small to support good health.

There are 6 classes of nutrients in food: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals and water.

Essential Nutrients have the following characteristic:

- It has a specific biological function.
- Removing it from the diet leads to a decline in human biological function, such as the normal functions of the blood cells or nervous system.
- Returning the missing nutrient to the diet before permanent damage occurs restores it to normal biological function.

Carbohydrates, proteins, lipids, and water are needed in large amounts.

Vitamins and minerals are needed in small amounts from the diet, they are called

micronutrients.

★ **Activity 1.2: Importance of Nutrients**

- Using powerpoint, show participants the chilly plant tree (figure 1) to further explain the characteristic of essential Nutrients. Ask participants the following questions:
 1. what are needed to for a chilly plant to grow healthy?
 2. Ask participants what happens if you remove the sun or the water?
 3. What should we do to prevent the plant from dying?
- Explain to participants, just like the water and sun for the plants, the 6 essential nutrients help the body function properly and be healthy. Removing those nutrients or not having enough of it can deteriorate the human body just like the chilly plant. Reintroducing these nutrients through diet can help the human body grow and function in its full capacity. If nutrients are missing especially when the chilly plant is young, they will be smaller or weaker when they grow older.

Figure 1: Picture comparing healthy and unhealthy chilly plants.



Show the first 1000 days of life poster (Figure 2) and explain.

Similarly with humans providing proper nutrients during pregnancy till the age of 2 is crucial so they can grow to be healthy adults.

Figure 2. The first 1000 days of life



The first 1000 days of life starts from conception until 2 years of age.

It is the most important development period for an individual and contributes to long term health outcomes. While the human brain continues to develop and change throughout life, the

most rapid period of brain growth is in the last trimester of pregnancy and the first two years of life.

Understanding Food Functions

★ Activity 1.3:

- Hand out a selection of the food cards to various participants
- Ask the participants about which food that they think is the most important for good health and why?
- After the participants provide the responses, the facilitator explains that for good health, we all need to eat a range of foods as each food contains nutrients that can help the body in different ways. This is especially important for children and women (pregnant, breastfeeding and are new mothers) who need the different foods to help them grow, have energy and to be protected from illness.

Nutrients can be assigned to 3 functional categories:

1. Those that primarily provide energy.
2. Those that are important for growth and development (and later maintenance)
3. Those that regulate body processes and keep body functions running smoothly¹

Table 1. Functional Categories of Nutrients

Provide Energy	Promote Growth and Development	Regulate Body Processes
• Most carbohydrates • Proteins • Most lipids (fats and oils)	• Proteins • Lipids • Some vitamins • Some minerals • Water	• Proteins • Some lipids • Some vitamins • Some minerals • Water

Use the table below to provide the explanations of each food group.

Table 2. Functions of Nutrients

Nutrients	Food Function	examples of food
Carbohydrate	• Provides Energy for the body • Aids in digestion	Sticky rice, Corn, Taro, Sweet Potato, Cassava
Proteins	• Promotes Growth • Repairs body tissues	Fish, Eggs, Soy beans, mung beans, Meat
Fats and Oils	• Provides energy	Vegetable oil, peanuts, Cashew Nut,

¹ Byrd-Bredbenner, Carol; Jacqueline Berning; Gaile Moe; Danita Kelley. Wardlaw's Perspectives in Nutrition (Page 5). McGraw-Hill Higher Education.

Nutrients	Food Function	examples of food
	Required to carry fat soluble vitamins in the body (Vitamin A,D,E,K)	Chestnut, Coconut oil, Avocado
Vitamins Eg: Vitamin A Vitamin C Vitamin B	Regulate chemical processes in the body - Aids in visions - Helps keep Skin and Hair Healthy - Helps maintain healthy teeth - Helps fight infections - Helps brain, nerves and muscles to functions	Dark green vegetables: Amaranth, yellow and orange fruits and vegetables like Pumpkin and Papaya, Beef liver, Eggs Oranges, Lemons, Peppers Fish, liver, Dried beans and peas, nuts, eggs
Minerals Eg: Calcium Iron Zinc	Controls body functions - Helps build and maintain healthy bones and teeth - Helps cells carry oxygen - Helps in growth of cells and helps repair damaged tissue	Milk, Small fish with bones, insects Liver, meat, egg yolk, dried pean and beans Seafood, poultry, pork, beef, Pumpkin seeds
Water	- Carries nutrients to cells and carries waste from the body - Regulates Body Temperature	

Session 2: Nutrition Requirements Throughout the Lifecycle

1. **Learning Objectives:** At the end of the session participants are expected to know the definition of a balanced diet, the Lao food flag guidelines, and the nutrient requirements throughout the lifecycle.
2. **Content**
 - Definition of a balanced diet
 - Food Flag
 - Nutrition during the lifecycle
3. **Time: 2 hour 45 mins**
4. **Materials Needed:** Flip chart board, Flip Chart, Meta Cards, Marker Pens, PowerPoint presentation, computer, LCD projector, Scotch tape
5. **Training Method**
 - Lecture based instruction, Group discussion, Group Work, Q&A session

Definition

★ Activity 2.1:

- Introduce the objective of the session
- Distribute the metacards to the participants
- Ask everyone to write on a meta card what they ate the day before: from the time they woke up till they went to bed.

★ Activity 2.2

Using a flip chart, ask at least three participants their understanding of the concepts below:

1. What is a balanced diet/meal?
2. Do the different family members (age group and condition) have the same food needs?

After the participants provide the responses, the facilitator moves forward to provide the right definition and details as provided in the session technical notes.

A balanced diet provides the correct amounts of food energy and nutrients needed during the day to cover the dietary requirements of the person eating it.

A balanced diet must be composed of a variety of different foods from different food groups so that it contains all the many macronutrients and micronutrients the person needs in sufficient quantities.

The Food Flag

Although your food intake varies from meal to meal and from day to day, keeping a balanced view of your diet is a good idea. The Lao food flag is meant to be a guideline for your daily food intake.

The Food flag helps to promote the 3 basic rules for a healthy diet:

- Variety • Balance • Moderation

Variety means that you must include many different foods from each group of the Food Flag because no single food can supply all of the nutrients that your body needs on a daily basis. For instance, from the vegetable group, dark green vegetables like morning glory and bok choy tend to be a good source of Vitamin A, folate and calcium while mushrooms are rich in

B vitamins. It is best to eat foods of all colours. The more colours and textures in your daily meals, the better range of nutrients you'll get.

Balance means that you must eat the right amounts of foods from the 6 food groups of the Food Flag each day. This way you will get all the calories and nutrients you need for proper growth and development.

Moderation means that you are careful not to eat too much of any one type of food. While fats and oils are essential for the body, consuming too much of it can be harmful. The food flag provides a guide in terms of how much of each food group needs to be consumed.

Figure 3: The Lao Food Flag

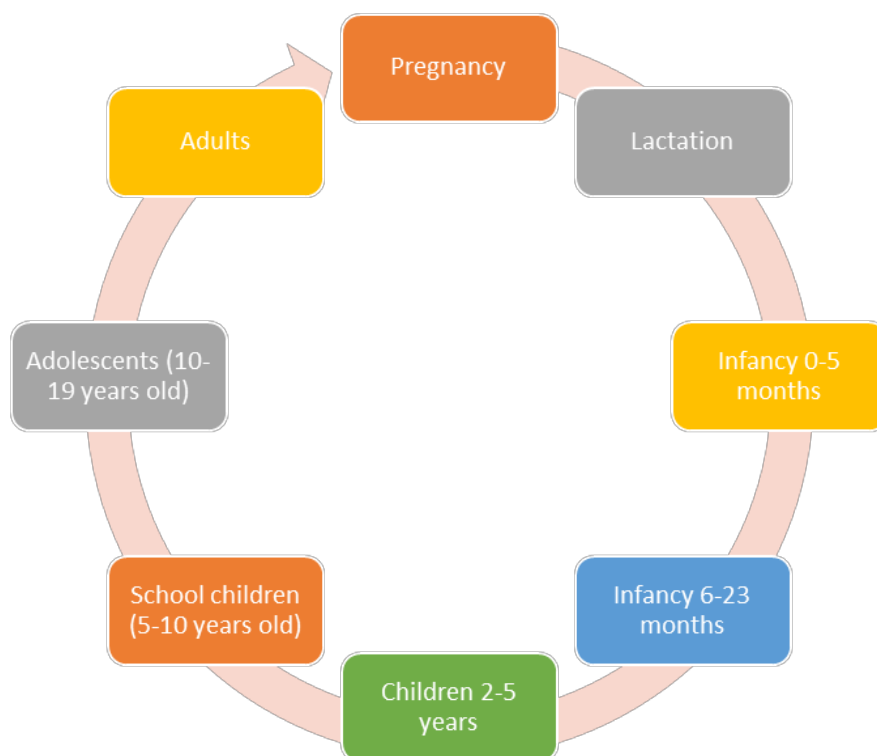


Nutrition During the Lifecycle

★ Activity 2.3

- Show the participants the lifecycle of a person (figure below) and explain the nutritional needs during pregnancy and lactation.
- **Ask the following questions:**
 1. Who in the room has been pregnant or has experience with their wife being pregnant?
 2. The information from today was it new for you?
 3. What challenges did you face during that period to meet your nutritional needs?
 4. What kind of information would have been useful during that period?

Figure 4: Different stages in a lifecycle



Nutrition during pregnancy and lactation

Pregnancy, or gestation, may be the most sensitive stage of the life cycle. The nutrients and calorie supplied at this time impact the outcome of the child. To help ensure the optimal health of both the mother and her offspring, adequate nutrition is vital both before and during pregnancy.

A favourable pregnancy outcome has a full-term gestation period (38 or 42 weeks) that results in a live, healthy infant weighing more than 2.5 kg.

To meet her calorie and nutrient needs, a pregnant woman should eat more nutrient dense food. A pregnant woman needs extra calories to support the growth of her own tissues, as well as those of the fetus.

During the 1st trimester, a daily increase of 50-100 kcal is recommended.

During the 2nd trimester, a daily increase of about 250-300 calories is recommended.

And in the 3rd trimester, a daily increase of approximately 450-500 calories is recommended².

Women in their 2nd and 3rd trimester need have an extra meal. Healthy women should gain at least half a kilo a week³. Women who begin pregnancy overweight or obese should aim for a somewhat smaller increase in food calories. Those who are in their teens, underweight, or physically active likely will need more calories.

Numerous nutrition-related factors - including maternal age, eating patterns, health, sociocultural factors, the safety of the food supply, and lifestyle choices - affect pregnancy outcome.

² Calorie intake for pregnant and lactating women is based on the Dietary reference intake for Thais 2020, Ministry of Public Health

³ Lao Maternal and Child record book “Pink Book”

Teenage pregnancy poses special health challenges because young women who are not physically mature, have high nutrient needs, frequently do not consume a healthy diet, are underweight at the beginning of pregnancy and gain too little weight during pregnancy, and often do not receive adequate prenatal care.

Women with health conditions, such as numerous and/or closely spaced pregnancies, multiple fetuses, HIV or AIDS, or diabetes mellitus, may not consume an adequate diet and have less than optimal nutrient stores. Inadequate prenatal care and untreated diabetes or pregnancy induced hypertension can lead to poor pregnancy outcomes.

Those with limited income or educational achievement and those who lack social support networks tend to have inadequate diets.

Environmental contaminants, foodborne illness pathogens, and certain compounds in food should be limited during pregnancy. Alcohol, drugs, tea, coffee, herbal and botanical products, and smoking are lifestyle choices that increase the risk of a poor pregnancy outcome.

★ Activity 2.4

- Divide into 3 groups.
- Ask each group to research and present:
 - Group 1 will present for breastfeeding women and infants below 6 months
 - Group 2 will present for 6-23 months and pre school children
 - Group 3 will present for children 6-13 years, adolescents and adulthood
- Using the powerpoint the trainer will present the slides on the nutritional needs of the different groups.

Nutrition for Breastfeeding Women

Water is the main component of human milk, like other milk. Inadequate water intake can affect milk composition, decrease the amount of milk produced, and lead to maternal dehydration. To keep herself well hydrated, a breastfeeding woman should drink to satisfy her thirst. Most need an extra 1 litre of fluid daily, in addition to the 2 litres recommended for nonpregnant women. Some women, especially those breastfeeding more than 1 baby, need to consume even greater quantities.

Calorie needs can be met by eating the same number of servings from each food group as recommended for a pregnant woman in the last 2 trimesters. The average breastfeeding woman uses about 800 calories per day during the first six months of lactation to produce 3 cups of milk daily⁴. Approximately 400 to 500 calories should come from her diet, with the remainder supplied by the fat stored during pregnancy.

However, severe calorie restrictions and weight loss greater than 1 to 2 kgs per month likely will reduce the total amount of milk produced. After 6 months of breastfeeding, all these extra calories will need to come from the woman's diet if she has returned to her pre-pregnancy weight. Inadequate calorie intakes will cause her body weight to continue to drop and if she becomes underweight, she may become unable to produce enough milk for her growing child.

⁴ Byrd-Bredbenner, Carol; Jacqueline Berning; Gaile Moe; Danita Kelley. Wardlaw's Perspectives in Nutrition (Page 607). McGraw-Hill Higher Education.

Ask the following questions:

- Do we see the problem of insufficient breastmilk production in this province/district?
- What are the reasons for this problem?
- Are there food taboos that restrict women's nutritional needs?
- What are other challenges in your experience that is resulting in women not being able to breastfeed?

Ask participants if they have any questions on this session.

Inform them that additional information is included in the textbook.

Nutritional requirements for Infants below 6 months⁵

Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development, and health. Colostrum, transitional milk, and mature milk are the successive types of milk produced while lactation is being established. Infants should be breastfed within the first hour of birth.

➤ **Colostrum**—thin, yellowish, “immature” milk

- May appear anytime from late pregnancy to several days postpartum.
- This early milk is richer in protein, minerals, and vitamin A.
- It contains antibodies and immune system cells, some of which pass unaltered through the infant’s immature GI tract into the bloodstream and provide the infant with a defense against some diseases during the 1st few months of life when the immune system is very immature. In addition, colostrum helps the infant excrete the fecal matter that collected in the intestinal tract during fetal life.

➤ **Transitional milk**

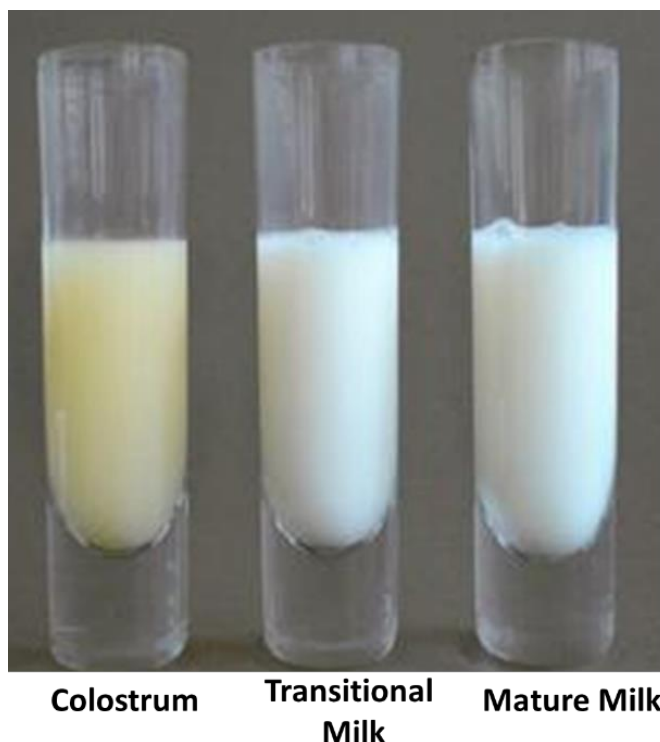
- The colostrum changes 72 hours after birth to become transitional milk
- It appear more white or yellowish
- Transitional milk contains more fat, lactose, water-soluble vitamins, and calories than colostrum
- Within 7-21 days, transitional milk is replaced by mature milk

➤ **Mature human milk**

- Appear 3 weeks after birth
- Is thin and almost watery
- The milk is white and contains more fat
- It provides all the nutrients and energy needed for the growing baby
- From 4-6 weeks, mother’s breasts will be fully developed and to produce milk

⁵ Byrd-Bredbenner, Carol; Jacqueline Berning; Gaile Moe; Danita Kelley. Wardlaw's Perspectives in Nutrition (Page 606). McGraw-Hill Higher Education.

Figure 5: Different types of mother's milk



Nutritional requirements for children 6 to 23 months

Starting at 6 months of age small amounts of food needs to be introduced and quantity increased as the child gets older, while maintaining frequent breastfeeding.

Infants can eat pureed, mashed and semi-solid foods beginning at six months.

By 8 months most infants can also eat “finger foods” (snacks that can be eaten by children alone).

By 12 months, most children can eat the same types of foods as consumed by the rest of the family.

For the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 months and 12-24 months of age, with additional nutritious snacks (such as a piece of fruit) offered 1-2 times per day.

Because of the rapid rate of growth and development during the first two years of life, nutrient needs per unit body weight of infants and young children are very high. Breast milk can make a substantial contribution to the total nutrient intake of children between 6 and 24 months of age, particularly for protein and many of the vitamins.

However, breast milk is relatively low in several minerals such as iron and zinc. Given the relatively small amounts of complementary foods that are consumed at 6-24 months the nutrient density of complementary foods needs to be very high.

A variety of foods need to be fed to ensure that nutrient needs are met. Meat, poultry, fish or eggs should be eaten daily, or as often as possible. Vitamin A-rich fruits and vegetables should be eaten daily. Drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda and packaged snacks need to be avoided. Added sugars such as sugar and syrups should be completely avoided.

Ask the following question:

- After 6 months of age why do we promote complementary food?

Explain showing the following figure.

Figure 6: Risk to starting complementary feeding too late or too early

RISKS TO STARTING COMPLEMENTARY FOODS TOO EARLY	RISKS TO STARTING COMPLEMENTARY FOODS TOO LATE
Adding complementary foods too soon (before six months) may: • As a substitute for breast milk, make it difficult to meet the child's nutritional needs. • Result in a diet that is low in nutrients, especially if thin, watery soups and porridges are used because these are considered easy for the child to ingest. • Increase the risk of illness because less of the protective factors in breastmilk are consumed. • Increase the risk of diarrhea because the complementary foods may not be as clean or as easy to digest as breast milk. • Increase the risk of wheezing and other allergic conditions because the child cannot yet digest and absorb non-human protein well. • Increase the mother's risk of another pregnancy if breastfeeding is less frequent.	Adding complementary foods too late is a also a risk, because: • The child does not receive the extra food required to meet his/her growing needs. • The child will grow and develop more slowly. • The child might end up lacking nutrients needed to avoid malnutrition and to combat nutrition-related diseases such as anemia (which is due to iron deficiency).

Ask participants if they have any questions on this session

Inform them that additional information is included in the textbook.

Nutritional requirements for Preschool children

Preschool-age children (ages 2 to 5) are still developing their eating habits and need encouragement to eat healthy meals and snacks. These children are eager to learn. They will often imitate eating behaviors of adults. They need supervision at mealtime as they are still working on chewing and swallowing skills.

It's important for preschoolers to eat a variety of fruits, vegetables, grains, protein foods, and calcium rich foods.

Children have small stomachs. Offering them 5 to 6 small meals is better than limiting them to 3 main meals. Frequent meals and snacks help children meet their nutrient and calorie needs.

Snacks should be nutrient dense. Children should avoid high fat, high sugar packaged snacks. Young children ages 2 to 3 typically need between 1000 and 1400 calories per day.

Children ages 4 and 5 need around 1200 to 1600 calories each day per day.

Table 3: Required quantity of food groups for pre-school children per day

Food group	2 year olds	3 year olds	4 and 5 year olds	What Counts as:
Fruits 	1 cup (200 g) of fruit	1-1 ½ cup (200-300 g) s of fruit	1-1 ½ cups (200-300 g) of fruit	½ cup of fruit? ½ cup mashed, sliced, or chopped fruit (100g) ½ medium banana (100 g) 4-5 large lychees (100 g)
Vegetables 	1 cup (60 g)	1 ½ cups (90 g)	1 ½ -2 cups (90-120 g)	½ cup of veggies? ½ cup mashed, sliced, or chopped vegetables (30 g) 1 cup raw leafy greens (30 g)
Grains 	½ cup uncooked rice (90 g)	¾ -1 cup uncooked rice (130-180g)	¾ -1 cup uncooked rice (130-180g)	½ cup uncooked rice? 3 bread 3 medium potato 1½ cup cooked noodles
Protein Foods 	60 grams of cooked meat	90-120 grams of cooked meat	90-150 grams of cooked meat	30 grams of cooked meat? 30 gram cooked beans 1 egg 30 gram tofu
Dairy 	2 cups (470 ml)	2 cups (470 ml)	2 ½ cups (590 ml)	½ cup of dairy? 118 ml of milk 100 gram yoghurt
WATER 	1 litre	1 litre	1.2 litre	

*oil, salt and sugar should be consumed in very small amounts per day

Nutritional requirements for children 6-13 years

As children develop, they require the same healthy foods adults eat, along with more vitamins and minerals to support growing bodies. This means grains; a wide variety of fresh fruits and vegetables; calcium for growing bones; and healthy proteins (fish, eggs, poultry, lean meat, nuts, and seeds); 6-8 glasses of water a day. For kids aged 6-13, the key word is variety.

Table 4: Required quantity of food groups for children aged 6-13 per day

Food group	6-8 year olds	9-13 year olds		What Counts as:
		Girls	Boys	
Fruits 	1 to 2 cup of fruit (200-400g)	1 ½ to 2 cups of fruit (300-400g)	1 ½ to 2 cups of fruit (300-400g)	½ cup of fruit? ½ cup mashed, sliced, or chopped fruit (100g) ½ medium banana (100 g) 4-5 large lychees (100 g)
Vegetables 	1 ½ to 2 ½ cups (90-150 g)	1 ½ to 3 cups (90-180g)	2-3 ½ cups (120-210g)	½ cup of veggies? ½ cup mashed, sliced, or chopped vegetables (30 g) 1 cup raw leafy greens (30g)
Grains 	¾ -1 cup uncooked rice (130-180g)	4/5 -1 1/6 cup uncooked rice (150 -220 g)	4/5 -1½ cup uncooked rice (150-280 g)	½ cup uncooked rice? 3 bread 3 medium potato 1½ cup cooked noodles
Protein Foods 	90- 165 grams of cooked meat	90 – 180 grams of cooked meat	150- 195 grams of cooked meat	30 grams of cooked meat? 30 gram cooked beans 1 egg 30 gram tofu
Dairy 	2½ cups (590 ml)	3 cups (700 ml)	3 cups (700 ml)	½ cup of dairy? 118 ml of milk 100 gram yoghurt
WATER 	1.2 litres	1.6-1.9 litres	1.6-1.9 litres	

*oil, salt and sugar should be consumed in very small amounts per day

Nutritional requirements in Adolescence

Adolescence (ages 10 to 19) is a crucial life stage where many experience a growth spurt and an increase in appetite. Physical growth rate is at its peak velocity during infancy, slows during childhood, then increases again during adolescence (show graph). To meet their growth needs a healthy diet is needed. The types and amounts of foods recommended for teenagers are the same as those for adults, except that teens have a greater need for calcium and iron.

Iron requirements increase during adolescence to help with growth and muscle development. After menstruation begins, girls need more iron than boys to replace menstrual losses. Lack of iron in the body may result in iron deficiency and increase the risk of iron deficiency anemia, which can lead to serious health consequences.

The rapid increase in bone mass in young people means that they require more calcium during their teenage years and if this is not provided, future bone health may be compromised. Good sources of calcium include dairy products, such as milk and yogurt. Some green vegetables such as amaranth, moringa leaves, as well as sesame seeds, also provide calcium. Fish that is eaten with the bones are also a source.

Figure 7: Growth Chart from Infancy to adolescent

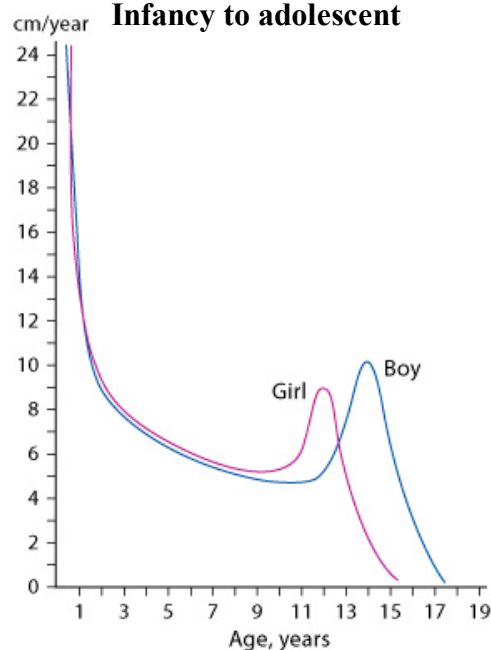


Table 5: Required quantity of food groups for children aged 14-18 per day

Food group	14-18 year olds		What Counts as:
	Girls	Boys	
Fruits 	1 ½ to 2 cups of fruit (300-400 g)	2 to 2 ½ cups of fruit (400-500g)	½ cup of fruit? ½ cup mashed, sliced, or chopped fruit (100g) ½ medium banana (100 g) 4-5 large lychees (100 g)
Vegetables 	2 ½ to 3 cups (75-90 g)	2½ to 4 cups (75-120g)	½ cup of veggies? ½ cup mashed, sliced, or chopped vegetables (30g) 1 cup raw leafy greens (30g)
Grains 	1-1 1/3 cup uncooked rice (180-240 g)	1-1 3/5 cup uncooked rice (180-315g)	½ cup uncooked rice? 3 bread 3 medium potato 1½ cup cooked noodles
Protein Foods 	120- -195 grams of cooked meat	165-210 grams of cooked meat	30 grams of cooked meat? 30 gram cooked beans 1 egg 30 gram tofu
Dairy 	3 cups (700 ml)	3 cups (700 ml)	½ cup of dairy? 118 ml of milk 100 gram yoghurt
WATER 	1.9-2.6 litres	1.9-2.6litres	

*oil, salt and sugar should be consumed in very small amounts per day

Nutritional requirements in Adulthood (19 years and above)

During adulthood, nutrients are used primarily to maintain the body rather than support physical growth. As adults get older, nutrient needs change. The challenge of the adult years is to maintain the body, preserve its function, and avoid chronic disease - that is, to age successfully. A healthy diet can help achieve this goal.

It is important to consume a variety of nutrient dense foods and beverages that result in a diet low in saturated fat (found in animal-based foods) and trans fats, cholesterol, added sugars, salt, and alcohol. Healthy meal patterns emphasize vegetables, fruits, whole grains, reduced saturated fat, and lean protein (seafood, poultry, eggs, beans) foods. Maintain body weight in a healthy range by controlling energy intake, increasing physical activity, and reducing time spent in sedentary behaviors.

Lowering sodium intake, eating less animal protein, and maintaining a healthy weight may delay the onset of age-related rises in blood pressure. Eating several smaller meals each day instead of a few larger ones may maximize digestion and absorption. Eating a fiber rich diet, drinking plenty of fluids, and exercising regularly help prevent constipation.

The American Heart Association recommends no more than 2,300 milligrams (mg) a day and moving toward an ideal limit of no more than 1,500 mg per day for most adults.

Table 6: The different fats and their sources

GOOD FAT 	NOT GOOD FAT Saturated Fats 	BAD FAT Trans Fats 
Use Often	Limit Use	Avoid Use
➤ Derived from vegetables and plants ➤ Also found in fish, nuts and seeds ➤ Lower bad cholesterol	➤ Saturated fat is found mostly in animal products/meats ➤ Also found in some plant based oil like palm oil and coconut oil ➤ Increase risk of heart disease ➤ Raises bad cholesterol	➤ Highly processed fat often found in fast foods and fried foods ➤ Increases risk of heart disease ➤ Raises bad cholesterol

Table 7: Required quantity of food groups for adults aged 19-59 per day

Food group	19-30 year olds		31-59 year olds		What Counts as:
	Women	Men	Women	Men	
Fruits 	1½ to 2 cup of fruit (300-400g)	2 to 2½ cup of fruit (400-500 g)	1½ to 2 cup of fruit (300-400 g)	2 to 2½ cup of fruit (400-500g)	½ cup of fruit? ½ cup mashed, sliced, or chopped fruit (100g) ½ medium banana (100 g) 4-5 large lychees (100 g)
Vegetables 	2½ to 3 cups (75-90 g)	3 to 4 cups (90-120 g)	2 to 3 cups (60-90 g)	3 to 4 cups (90-120 g)	½ cup of veggies? ½ cup mashed, sliced, or chopped vegetables 1 cup raw leafy greens
Grains 	1-1 1/3 cup uncooked rice (180-240 g)	4/5 - 1 1/6 cup uncooked rice (150 - 220 g)	1 1/3 to 1 3/5 cup uncooked rice (240-315 g)	1 1/6 - 1 3/5 cup cooked rice (220-315g)	½ cup uncooked rice? 3 bread 3 medium potato 1½ cup cooked noodles
Protein Foods 	150- 195 grams of cooked meat	195-210 grams of cooked meat	150- 180 grams of cooked meat	180- 210 grams of cooked meat	30 grams of cooked meat? 30 gram cooked beans 1 egg 30 gram tofu
Dairy 	3 cups (700 ml)	3 cups (700 ml)	3 cups (700 ml)	3 cups (700 ml)	½ cup of dairy? 118 ml of milk 100 gram yoghurt
WATER 	2.1 litres	3 litres	2.1 litres	3.1 litres	

*oil, salt and sugar should be consumed in very small amounts per day

Table 8: Required quantity of food groups for adults aged 60 + per day

Food group	60+ years old		What Counts as:
	Women	Men	
Fruits 	1 ½ to 2 cups of fruit (300-400 g)	2 cups of fruit (400g)	½ cup of fruit? ½ cup mashed, sliced, or chopped fruit (100g) ½ medium banana (100 g) 4-5 large lychees (100 g)
Vegetables 	2 to 3 cups (60-90 g)	2½ to 3½ cups (75- 105g)	½ cup of veggies? ½ cup mashed, sliced, or chopped vegetables (30g) 1 cup raw leafy greens (30g)
Grains 	4/5 -1 1/6 cup uncooked rice (150 -220 g)	1-1½ cup uncooked rice (180g -280g)	½ cup uncooked rice? 3 bread 3 medium potato 1½ cup cooked noodles
Protein Foods 	150-180 grams of cooked meat	165-195 grams of cooked meat	30 grams of cooked meat? 30 gram cooked beans 1 egg 30 gram tofu
Dairy 	3 cups (700 ml)	3 cups (700 ml)	½ cup of dairy? 118 ml of milk 100 gram yoghurt
WATER 	2.1 litres	3.1 litres	

*oil, salt and sugar should be consumed in very small amounts per day

Figure 8: Limit the amount of added sugar, oil and salt



- ★ **Activity 2.5:** Ask everyone to look at the metacard where they recorded their diet from the previous day. Ask the following questions:
- Based on what we have learned about the 3 basic rules of a healthy diet and the nutritional needs for different ages groups, lets assess our diets from yesterday.
 1. Did you eat from all 6 food groups?
 2. Did you eat a variety of foods yesterday?
 3. Did you have a balanced meal? Did you eat enough from each of the food group?
 4. Did you eat too little or too much of a certain group?
 5. What do you need to do differently to ensure you follow the 3 basic rules for a healthy diet?

Session 3: Malnutrition

1. **Learning Objectives:** At the end of the session participants are expected to know the definition and types of malnutrition, the causes and consequences of malnutrition
 2. **Content:**
 - Definition of Malnutrition
 - Types of undernutrition
 - Causes of undernutrition
 - Intergeneration cycle of undernutrition
 - Consequences of undernutrition
 - Non-communicable diseases
 3. **Time: 1 hr and 45 mins**
 4. **Materials Needed:** Flip chart board, Flip Chart, Marker Pens, Powerpoint Presentation, LC projector, Computer, scotch tape
 5. **Training Method**
 - Lecture based instruction, Group discussion, individual exercise, Q&A session
- ★ **Activity 3.1:**
- The trainer explains the objective.
 - The facilitator asks the participants to mention their understanding of the term malnutrition.
 - The facilitators give the right content as detailed in the session technical notes.

Definitions

Malnutrition

Refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients.

Micronutrient Deficiency

A state of malnutrition caused by a shortage of essential vitamins or minerals need for growth and development, a healthy immune system and proper functioning of the body. People often suffer from more than one deficiency at a time but nonetheless may not show any signs or symptoms, leading to it sometimes being referred to as "hidden hunger."⁶

Overnutrition

A condition in which the body receives more nutrients than it needs, causing fat to accumulate in the body.⁷

Undernutrition

occurs when an individual has a shortfall of nutrients or energy than required.

There are three types of malnutrition:

- **undernutrition**, which includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age).
- **micronutrient-related malnutrition**, which includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess; and

⁶ Lao Nutrition Glossary, 2023

⁷ Lao Nutrition Glossary 2023

- **overweight, obesity and diet-related noncommunicable diseases** (such as heart disease, stroke, diabetes and some cancers).⁸

Under-Nutrition

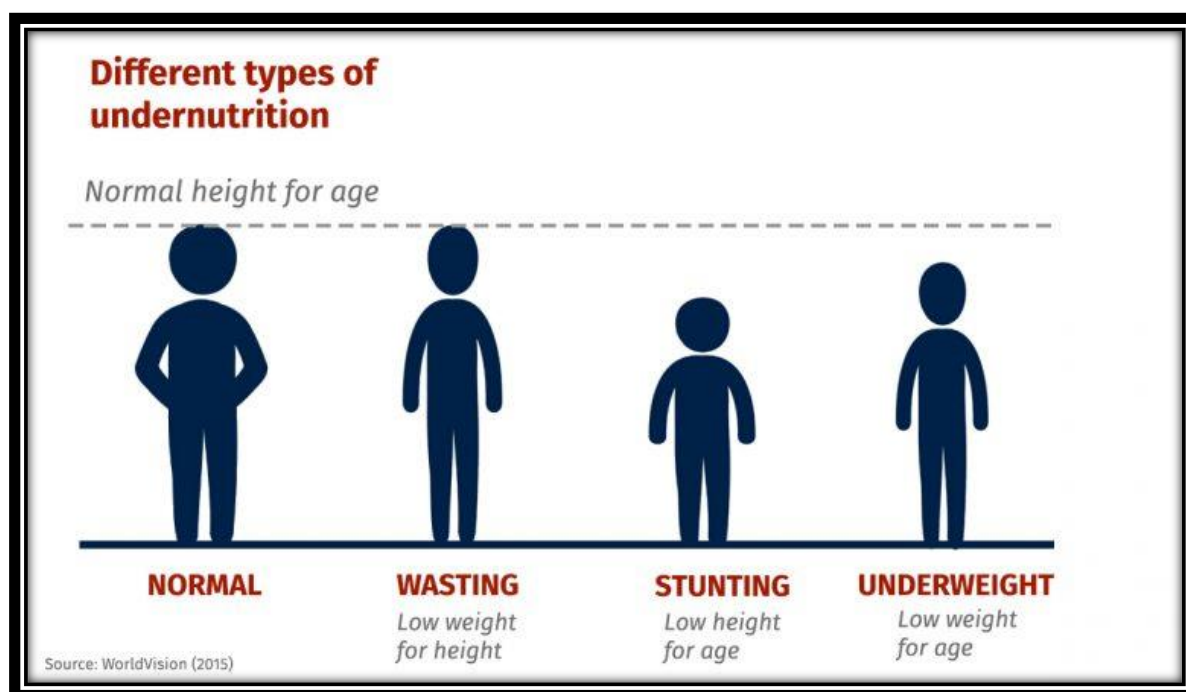
There are 3 broad sub-forms of undernutrition: wasting, stunting and underweight (show picture).

Wasting: Low weight-for-height. It usually indicates recent and severe weight loss, because a person has not had enough food to eat and/or they have had an infectious disease, such as diarrhoea, which has caused them to lose weight. A young child who is moderately or severely wasted has an increased risk of death, but treatment is possible.

Stunting: Low height-for-age (show picture). It is the result of chronic or recurrent undernutrition, usually associated with poor socioeconomic conditions, poor maternal health and nutrition, frequent illness, and/or inappropriate infant and young child feeding and care in early life. Stunting holds children back from reaching their physical and cognitive potential.

Underweight: Low weight-for-age. A child who is underweight may be stunted, wasted, or both.

Figure 9: Different forms of undernutrition



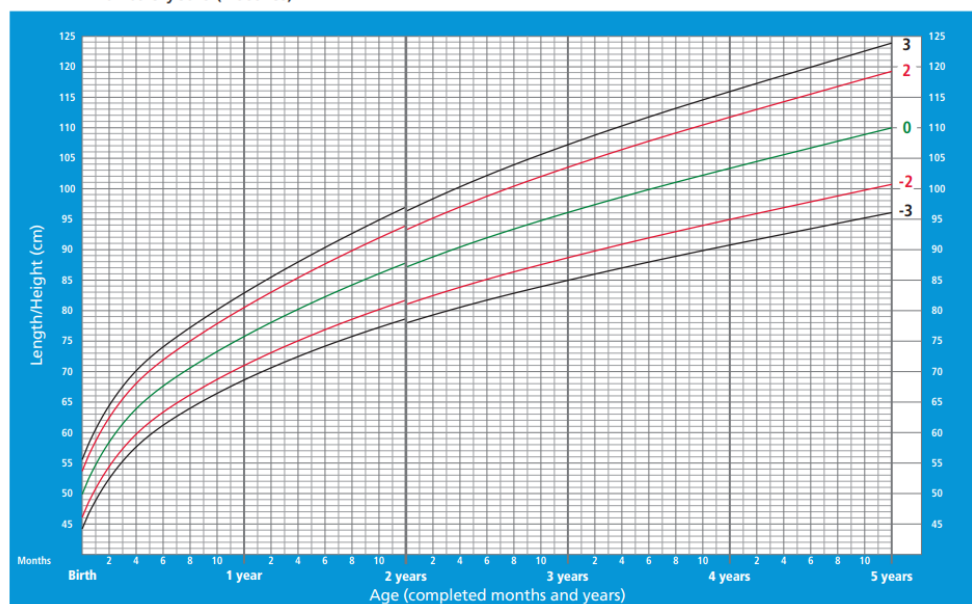
Growth charts (figures below) are a good way to monitor a child's growth and health. They show how kids are growing compared with other kids of the same age and gender. They also show the pattern of kids' height and weight gain over time, and whether they're growing proportionately. Health facilities are responsible to monitor the growth of children and provide the appropriate counselling.

⁸ WHO, [Fact sheets - Malnutrition \(who.int\)](http://www.who.int/fact-sheets/malnutrition)

Figure 10

Length/height-for-age BOYS

Birth to 5 years (z-scores)



WHO Child Growth Standards

★ Activity 3.2

Ask the participants to go to the annex with the page in the textbook with the growth chart on height/length for age for girls and boys and ask them to record the following:

Boy	Girl
2 months, 55 cm	2 months, 55 cm
6 months, 60 cm	6 months, 60 cm
10 months, 68 cm	10 months, 68 cm
1 year 2 month, 72 cm	1 year 2 month, 72 cm
1 year 6 month, 75 cm	1 year 6 month, 75 cm
1 year 10 month, 77 cm	1 year 10 month, 77 cm

Ask the following questions:

- What are your observations of the growth of the two children?
- Are they malnourished?
- Is there a difference in growth pattern by gender?
- What can be done to ensure the children have a healthy growth?

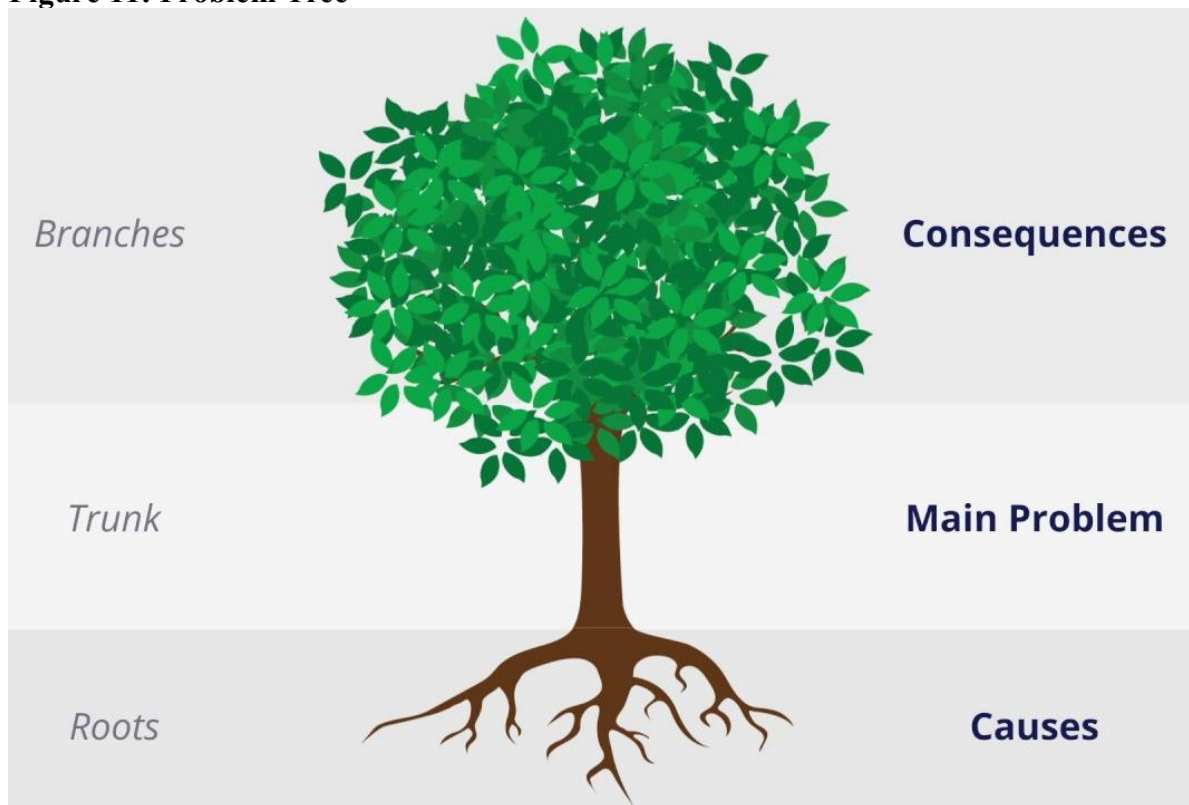
Causes of Undernutrition

★ Activity 3.3:

- Divide into 4 groups and make a problem tree.
- Introduce the activity and explain the problem tree.
- Point out the different parts of the tree and what each represents: the Roots = Root Causes of the Problem, the Trunk = the Problem (i.e. Undernutrition), The Branches = Consequences of the Problem

- Ask a participant to draw a large tree on flipchart paper (or you may want to do this upfront). Write the problem on which you are working on the trunk of the tree.
- Ask all participants to list the causes of the problem. If possible, let each participant who suggests a cause write it on a card and tape it to the roots of the problem tree. Encourage people to explore social, economic and political causes including attitudes, behavior, and other factors.
- Repeat the same process with the consequences
- Have each group present their problem tree

Figure 11: Problem Tree



★ **Activity 3.4**

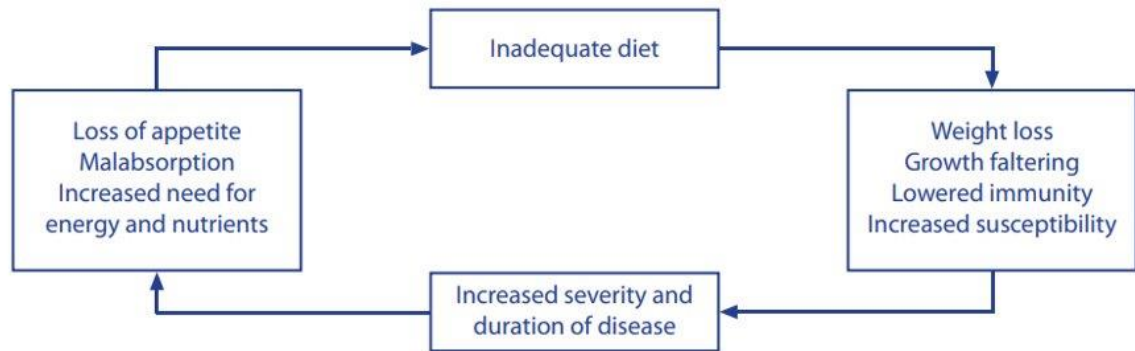
Go to the slides and explain the causes of malnutrition.

Maternal and child undernutrition is caused not just by the lack of adequate, nutritious food, but by frequent illness, poor care practices and lack of access to health and other social services. These multifactorial determinants are outlined in UNICEF's conceptual framework (show the framework and explain).

Immediate cause

Immediate causes of undernutrition are inadequate dietary intake and disease. Undernutrition can increase the risk of infection, while infection can cause malnutrition leading to a vicious cycle.

Figure 12: The infection-malnutrition cycle⁹



Underlying cause

A child's dietary intake and exposure to disease are affected by underlying factors, including household food insecurity (lack of availability of, access to, and/or utilization of a diverse diet), inadequate care and feeding practices for children, unhealthy household and surrounding environments, and inaccessible and often inadequate health care.

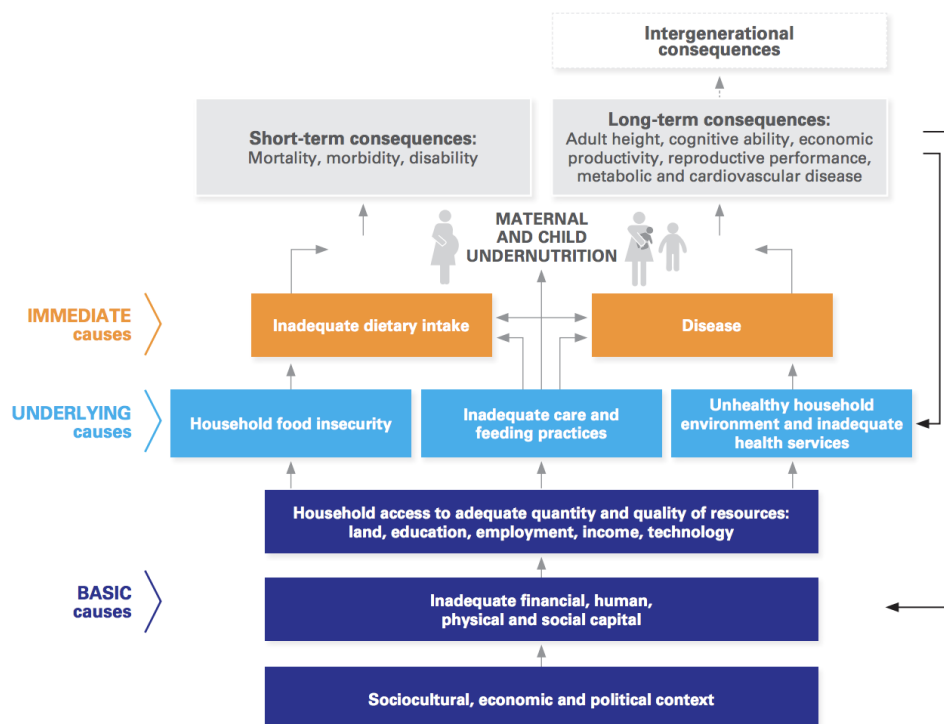
Basic causes

Basic causes of poor nutrition encompass the societal structures and processes that neglect human rights and perpetuate poverty, limiting or denying the access of vulnerable populations to essential resources. Social, economic, and political factors can have a long-term influence on maternal and childhood undernutrition. Moreover, chronic undernutrition can lead to poverty, creating a vicious cycle.

⁹ Based on Andrew Tomkins and Fiona Watson, ACC/SCN Geneva 1989

Figure 13: Conceptual framework of the determinant of child undernutrition¹⁰

The black arrows show that the consequences of undernutrition can feed back to the underlying and basic causes of undernutrition, perpetuating the cycle of undernutrition, poverty and inequities.

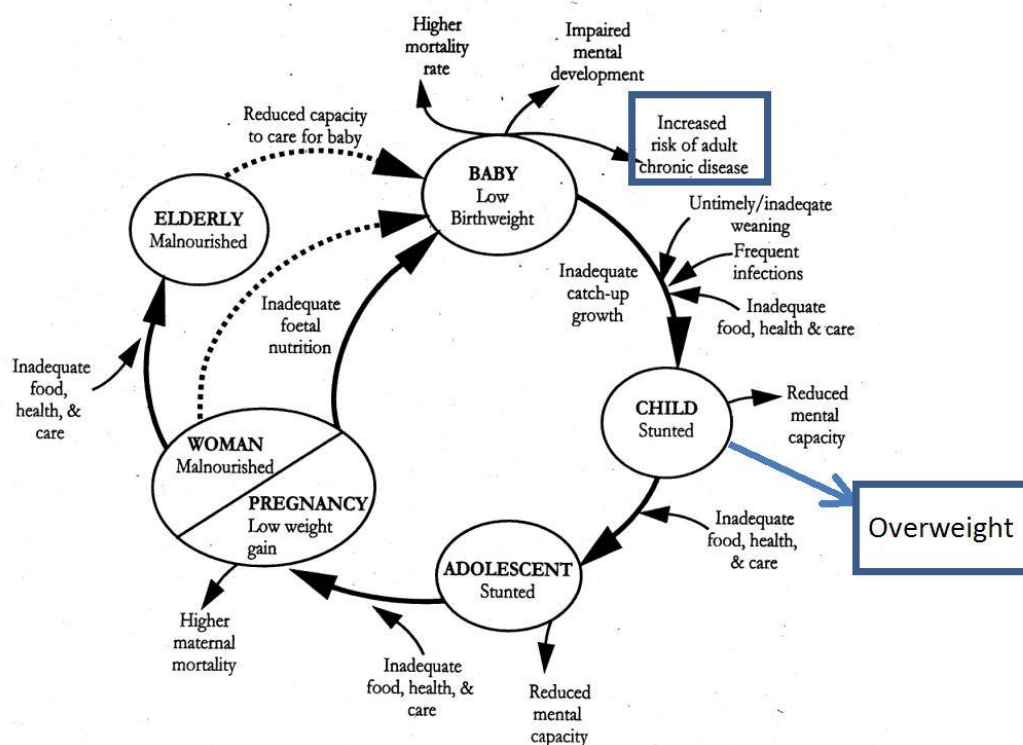


Cycle of Undernutrition

The intergenerational cycle (show figure) is the path through which a low-birth-weight baby becomes a stunted child, a stunted adolescent and a malnourished woman who, in turn, has another low-birth-weight baby. Fig. 16 illustrates how poor nutrition starts in utero among women with poor nutritional status before and during pregnancy and extends throughout the life course, affecting the next generation. This vicious circle restrains the development of some of the world's poorest countries, whose workforce, affected both mentally and physically, has reduced work capacity. Further, this cycle perpetrates a chronic lack of enjoyment of the right to health.

¹⁰ UNICEF. Improving Child Nutrition: The achievable imperative for global progress. United Nations Children's Fund; 2013.p.4.

Figure 14: Cycle of Undernutrition



Source : United Nations Subcommittee on Nutrition Fourth Report on the World Nutrition Situation, 2000 - modified

Consequence of undernutrition

The consequences associated with undernutrition can be devastating.

In the short term, undernutrition increases the risk of mortality and morbidity.

In the longer term, the consequences of stunting extend to adulthood, increasing risk of poor pregnancy outcomes (including newborns who are small for gestational age), impaired cognition that results in poor school performance, reduced economic productivity and earnings, and future risk for overweight and subsequently NCDs such as hypertension, cardiovascular disease. Stunting, micronutrient deficiencies, overweight and related NCDs can occur in the same country, district, household and often the same individual over the life course.¹¹

Micronutrient-related malnutrition

Micronutrients like vitamins and minerals enable the body to produce enzymes, hormones, and other substances that are essential for proper growth and development. Micronutrient deficiencies can have devastating consequences.

Iodine, vitamin A, Thiamine (vitamin B1) and iron are the most important in global public health terms; their deficiency represents a major threat to the health and development of populations worldwide, particularly children and pregnant women in low-income countries.

Iron deficiency is a leading cause of anemia. Anemia during pregnancy increases the risk of death for the mother and low birth weight for the infant.

¹¹ <https://www.thelancet.com/series/double-burden-malnutrition>

Vitamin A supports healthy eyesight and immune system functions. Children with vitamin A deficiency face an increased risk of blindness and death from infections such as measles and diarrhea.

In pregnant women, severe iodine deficiency can permanently harm the fetus by causing stunted growth, intellectual disability, and delayed sexual development. Less severe iodine deficiency can cause lower-than-average IQ in infants and children and decrease adults' ability to work and think clearly.

Vitamin B1 or thiamin is involved in several basic cell functions and the breakdown of nutrients for energy. Deficiency can lead to various problems in the brain and heart such as BeriBeri disease.

Overweight and obesity

Overweight and obesity is when a person is too heavy for his or her height. Abnormal or excessive fat accumulation can negatively affect health.

The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Globally, there has been:

- An increased intake of energy-dense foods that are high in fat and sugars.
- A decrease in physical activity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

Diet-related noncommunicable diseases

Diet-related noncommunicable diseases (NCDs) include cardiovascular diseases (such as heart attacks and stroke, and often linked with high blood pressure), certain cancers, and diabetes. Unhealthy diets and poor nutrition are among the top risk factors for these diseases globally.

Session 4: Nutrition Interventions

1. **Learning Objectives:** At the end of the session participants will learn about the difference between Nutrition-specific and Nutrition Sensitive interventions
 2. **Content**
 - Nutrition sensitive and Nutrition Specific interventions
 3. **Time: 60 mins**
 4. **Materials Needed:** Flip Charts, Marker Pen, PowerPoint presentation, LCD projector, computer, scotch tape
 1. **Training Method**
 - Lecture based instruction, Group discussion, Group work
- ★ **Activity 4.1:**
- Divide the participants into groups of 4 and ask them to list the different nutrition interventions they know of, or their departments are involved in.
 - Ask each group to share.
 - Explain further with the session technical notes.

From the problem tree we have learnt that malnutrition is a multi-faceted problem, with causes across a number of sectors. Household food security, adequate care and feeding practices, as well as a healthy environment and access to health services are all important factors for optimal growth.

There are two types of interventions: Nutrition Specific and Nutrition Sensitive.

Nutrition-specific interventions are interventions whose primary objective is to address nutrition and that target the immediate causes of undernutrition. These include micronutrient supplementation, Integrated Management of Acute malnutrition, etc.

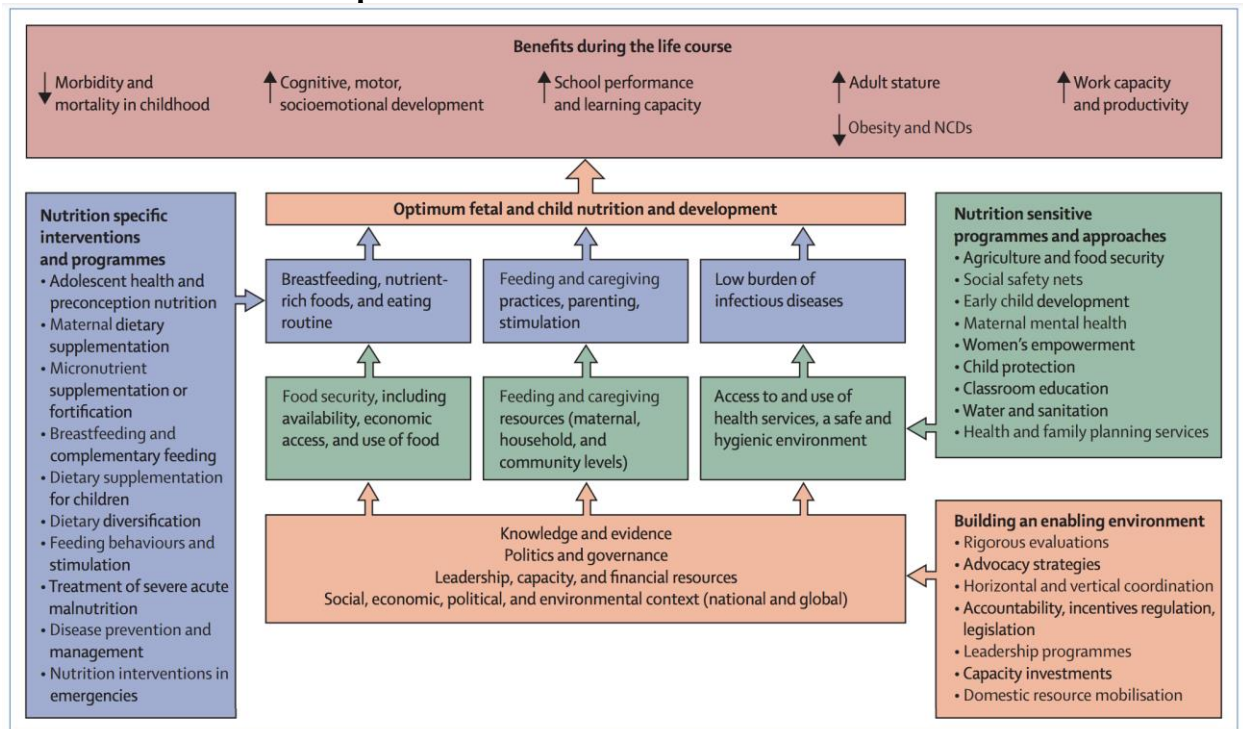
Nutrition-sensitive interventions are those whose primary objective is not nutrition, but that have the potential to improve the food and nutrition security and health of people.

Implementing nutrition-specific interventions solely is not enough.

Achieving a sustainable decrease in malnutrition rates requires an integrated response hence nutrition sensitive approaches are also needed.

Show the figure below and explain.

Figure 15: Nutrition Specific and sensitive Interventions to achieve optimum fetal and child nutrition and development¹²



¹² Executive Summary of The Lancet Maternal and Child Nutrition Series, 2013

Session 5: Nutrition Information of Laos

- 1. Learning Objectives:** At the end of the session participants will learn how to use the NIPN Dashboard and access data
 - 2. Content**
 - NIPN dashboard
 - 3. Time: 30 minutes**
 - 4. Materials Needs:** Link to NIPN dashboard and video, PowerPoint Presentation, Computer, LCD projector
 - 5. Training Method**
 - Lecture based instruction, Q&A session
- ★ **Activity 5.1:**
- Show the NIPN video [NIPN Dashboard and data repository introduction - YouTube](#)
 - Open the link to informative Dashboard: <https://nipn.lsb.gov.la/>
 - Scroll through the Dashboard and explain the indicators, the rates by province and the national targets.

Session 6: Global and National Nutrition Goals

1. **Learning Objectives:** At the end of the session participants will learn about Lao PDRs Commitment to the SDGs and the National Nutrition Strategy and Nutrition Plan of Action.
2. **Content:**
 - Sustainable Development Goals
 - National Nutrition Strategy
 - National Plan of Action
 - Multi-sector nutrition platform
3. **Time: 1 hour and 40 mins**
4. **Materials Needed:** PowerPoint presentation, PDF of NPAN 2021-2025
5. **Training Method**
 - Lecture based instruction, Group discussion, Group work, Q&A session
6. **Steps**
 - Explain objective of the training
 - Explain about the SDGs
 - Explain the NPAN

Sustainable Development Goals

In September 2015, United Nations General Assembly (UNGA) adopted the Agenda for Sustainable Development (UN, 2015) with 17 Sustainable Development Goals (SDGs), committing the international community to end poverty and hunger and achieve sustainable development by 2030.

The SDG2¹³ is to end hunger, achieve food security and improve nutrition and promote sustainable agriculture. It has six targets:

- Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.
- Target 2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
- Target 2.3: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
- Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- Target 2.5: By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

¹³ <https://sdgs.un.org/goals/goal2>

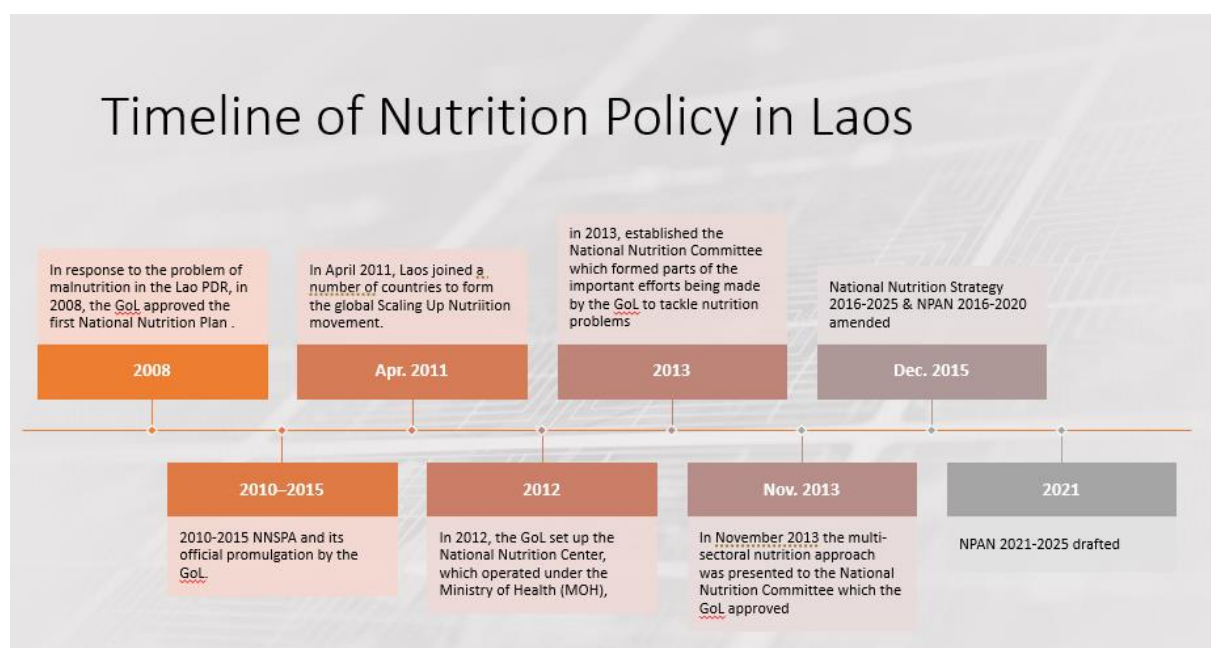
- Target 2.5a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension service, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.

In April 2016, the UNGA proclaimed 2016 to 2025 the United Nations Decade of Action on Nutrition.

The Nutrition Decade’s vision is to build a world where all countries, organizations and others working on nutrition coordinate action and always strengthen collaboration so that all people and at all stages of life have access to affordable, diversified, safe and healthy diets.¹⁴

The Government of Lao PDR is strongly committed to the 2030 Agenda for Sustainable Development and the implementation and achievement of the SDGs. Lao PDR was among the earliest countries to localize the SDGs and integrate them into its national planning framework.

Figure 16: Timeline showing the nutrition policy in Laos



The National Nutrition Strategy & Plan of Action 2016-2025

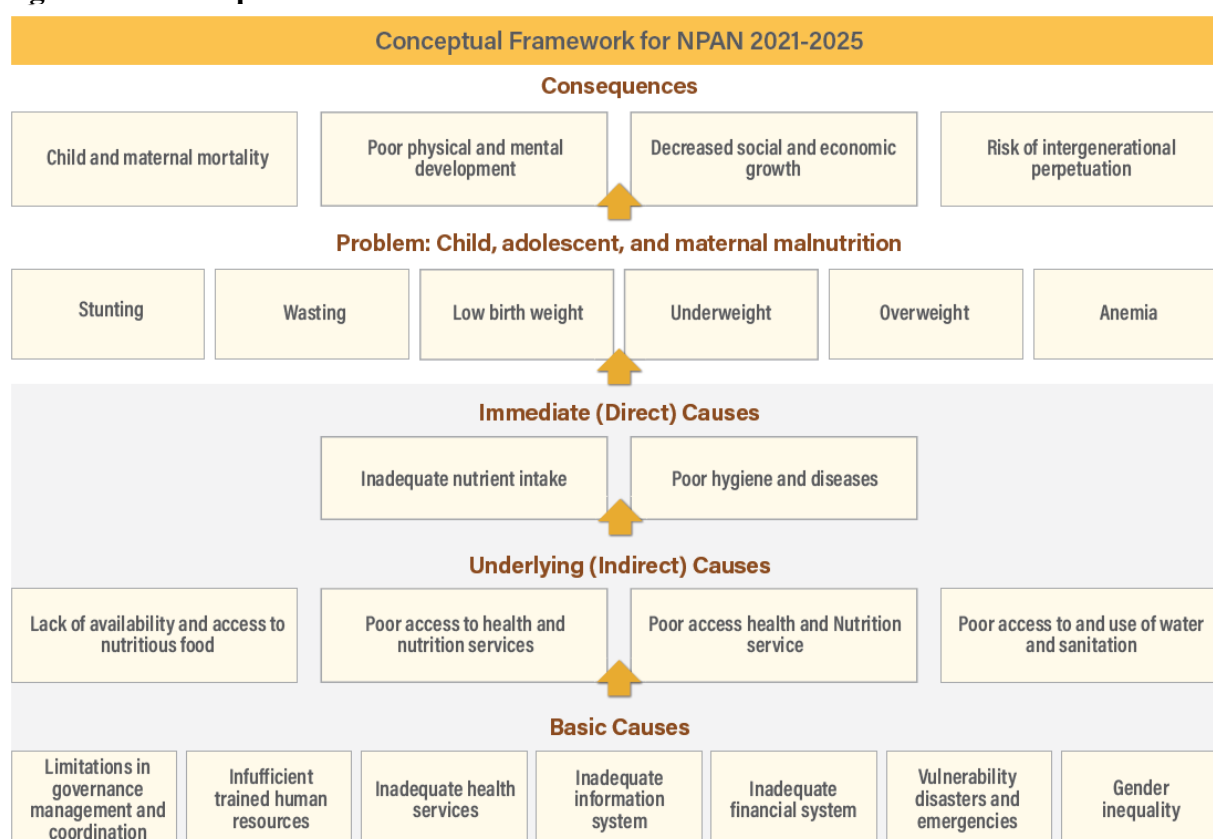
- The NNS to 2025 is aligned with National Nutrition Policy (NNP) and the 9th Five-Year NSEDP and are also in line with the national socio-economic development goals aimed at achieving the successful fulfilment of the SDGs.
- The National Nutrition Strategy and Plan of Action (NNSPA) first and foremost seeks to achieve SDG 2 “End hunger, achieve food security and improved nutrition and promote sustainable agriculture,” and contributes directly to several others.

¹⁴ [Decade of Action on Nutrition | \(un.org\)](https://www.un.org/en/development/desa/population/nutrition/decade/)

National Plan of Action on Nutrition (NPAN) 2021-2025

- Vision: A prosperous country, with a healthy, food-secure population, with reduced malnutrition and poverty.
- Mission: Create an enabling environment to reduce all forms of malnutrition in Lao PDR, focus on nutrition priorities, and ensure effective multisectoral coordination, implementation, and monitoring and evaluation at all levels.
- Overall Goal: To reduce malnutrition among women and children and improve the nutritional status of all Lao people so that they are healthy and have a high quality of life, and thus contribute to the achievement of national socio-economic development targets by 2025.

Figure 17: Conceptual Framework for NPAN 2021-2025



Strategic Framework for NPAN 2021-2025 has 3 components:

Component 1: Address direct (immediate) causes of malnutrition.

Component 2: Address indirect (underlying) causes of malnutrition.

Component 3: Address basic causes of malnutrition, create an enabling environment, and promote multisectoral action.

Strategic Objectives for NPAN 2021-2025

- SO1: Improve nutrient intake.
- SO2: Improve water and sanitation, promote hygiene, prevent and control diseases.
- SO3: Increase availability of and access to nutritious food.
- SO4: Improve child and adolescent knowledge and behaviors about nutritious diets.
- SO5: Improve mother and child health and care.
- SO6: Strengthen institutional capacity, governance, management, and coordination.
- SO7: Strengthen human resources.

- SO8: Improve health service delivery system for communities.
- SO9: Improve information management and use of evidence for decision-making.
- SO10: Improve financial management and increase investment.
- SO11: Ensure effective preparedness and response to disasters and emergencies, and social protection.
- SO12: Scale up social and behaviors change communication (SBCC) for nutrition.
- SO13: Promote Gender Equity

Table 9: Intervention and indicators by Sector in the NPAN 2021-2025

Sector	Number of Interventions	Number of Indicators
Health	7, including 1 joint Health and Education	19, including 3 Education/WASH, and 2 Education and Health
Education	4, including 1 joint Education and Health	7, including 3 Education/WASH, and 2 Education and Health
Agriculture	4	4
Multisectoral	8	11
Total	22 Interventions (1 joint Health and Education is counted only once)	36 Indicators (5 Indicators in both Health and Education are counted only once each)

Examples of Multisectoral action:

- The development of model nutrition villages requires actions not only in the health sector, but also in water, sanitation and hygiene (WASH), education, agriculture, and others.
- Health, micronutrient supplementation, deworming, and WASH activities in schools require cooperation between education and health sectors. In general, the health sector provides technical guidance and input for these activities, but the activities are implemented by the education workforce (teachers). Objectives, targets, and reporting arrangements should be agreed and monitored jointly.
- Measurement of dietary diversity and/or consumption requires cooperation between health and agriculture sectors. (If these activities occur in schools, they require cooperation between health and education sectors).
- While SO4 reaches secondary school girls, and SO5 provides health care for mothers and children, it is also important to reach adolescent girls who are not in school with nutrition education and supportive services, in the context of broader adolescent sexual and reproductive health. This requires cooperation between health and education agencies, as well as Lao Women's Union and Lao Youth Union.
- Food safety is an issue that involves both the agriculture sector (in terms of safe production, processing, and storage) and the health sector (in terms of safe preparation and cooking).
- Increasingly, Lao PDR is faced with the challenge of how to promote a better food system and better food choices. The cheapest foods available in the market tend to be processed foods with low nutritional value. Social and behavior change communication (SBCC) needs to focus on improving food choices in families, and this cannot be addressed by any single sector, but instead by several working together – health, agriculture, education, Lao Women's Union, Lao Youth Union, and others.

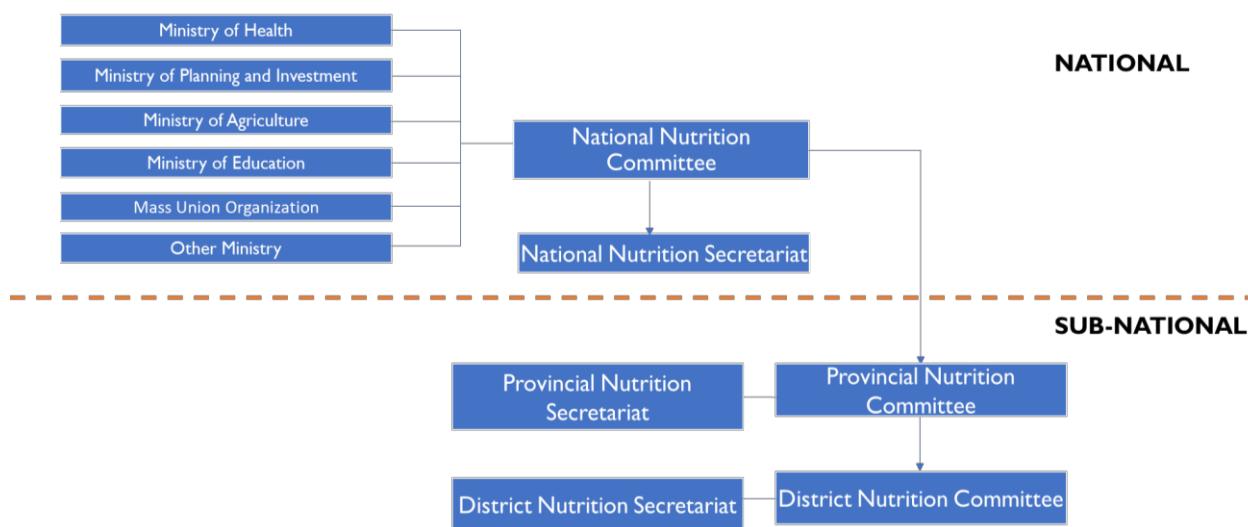
★ **Activity 6.1:**

- Divide the participants by sector.
- Ask them to go through page 54-59 and identify the nutrition interventions listed in the NPAN that their department is involved in and ask them to share.

Multi-Sectoral Nutrition Coordination Platform in Lao PDR

To operationalize the NPAN nutrition coordination mechanism was established. The coordination mechanism is presented in the picture below.

Figure 18: Coordination Mechanism for NPAN



Explain the following:

Provincial Nutrition committees comply with the orders and directives of the National Nutrition Committee.

District Nutrition committees comply with the orders and directives of the National Nutrition Committee and Provincial Nutrition Committee.

The District Secretariat reports on implementation of Nutrition plans to PNC-S and the PNC-S reports to the National Secretariat.

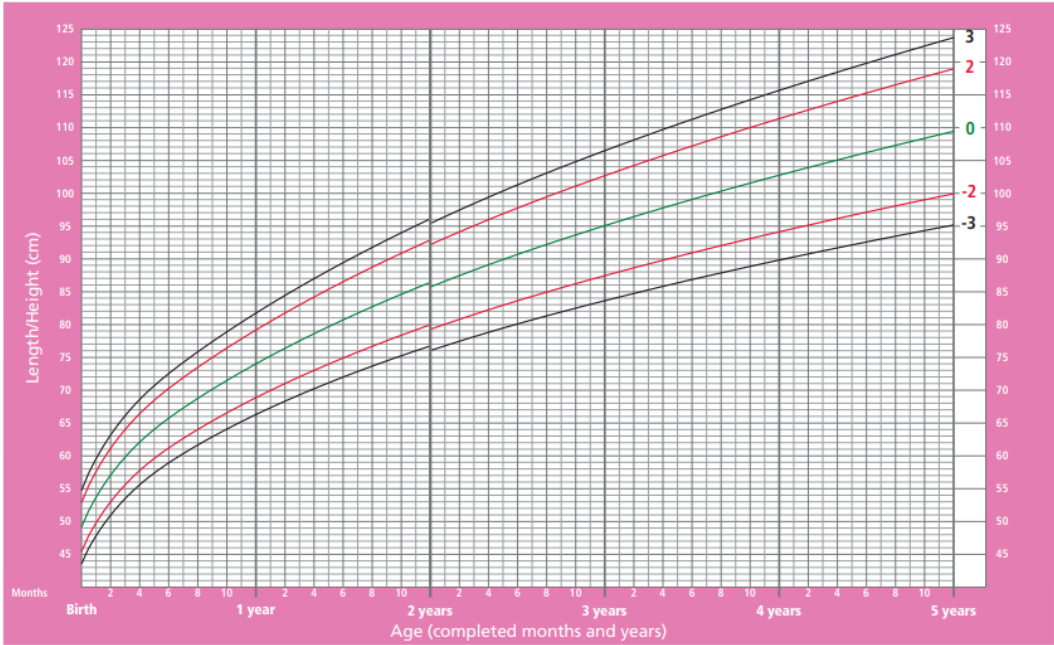
The secretariats are supporting the respective committees.

Annex

Annex 1

Length/height-for-age GIRLS

Birth to 5 years (z-scores)

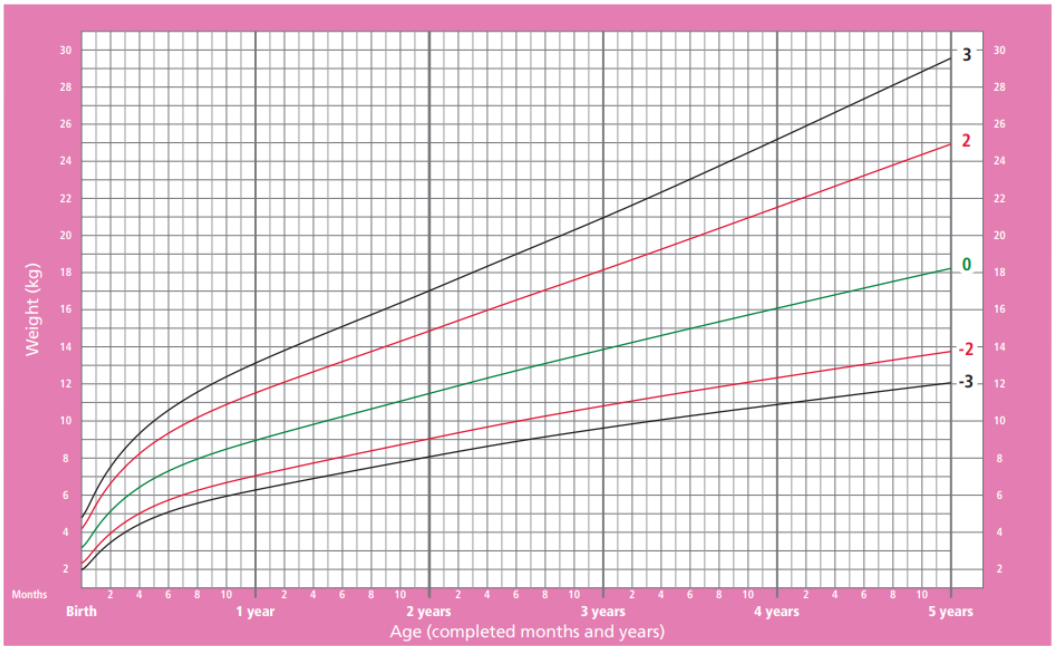


WHO Child Growth Standards

Annex 2

Weight-for-age GIRLS

Birth to 5 years (z-scores)

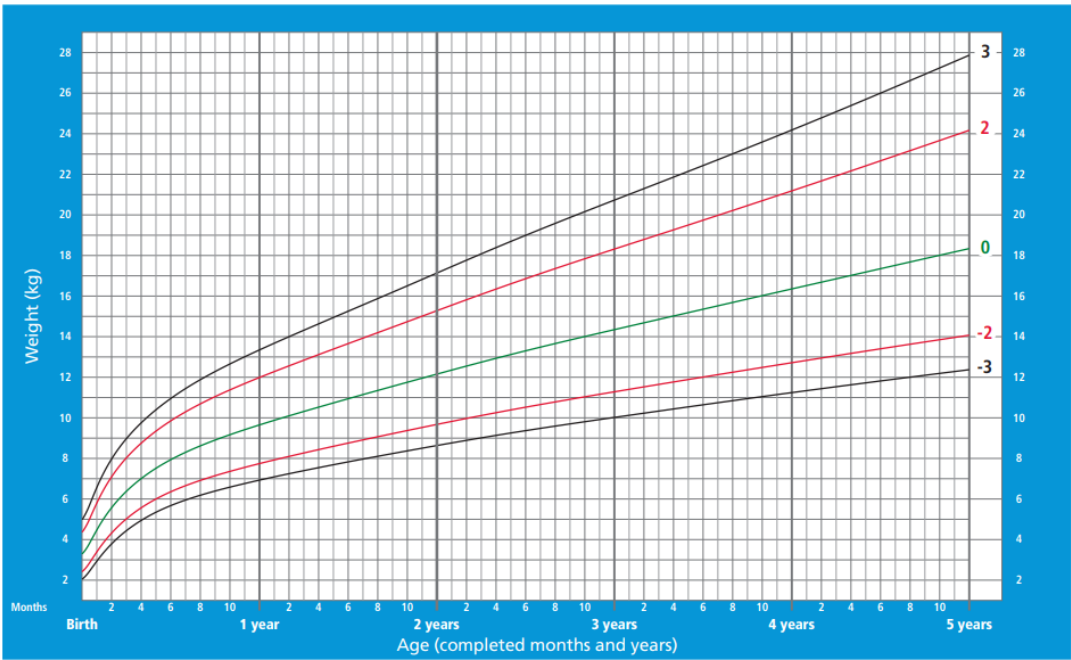


WHO Child Growth Standards

Annex 3

Weight-for-age BOYS

Birth to 5 years (z-scores)



WHO Child Growth Standards

Annex 4

Weight-for-length/height GIRLS

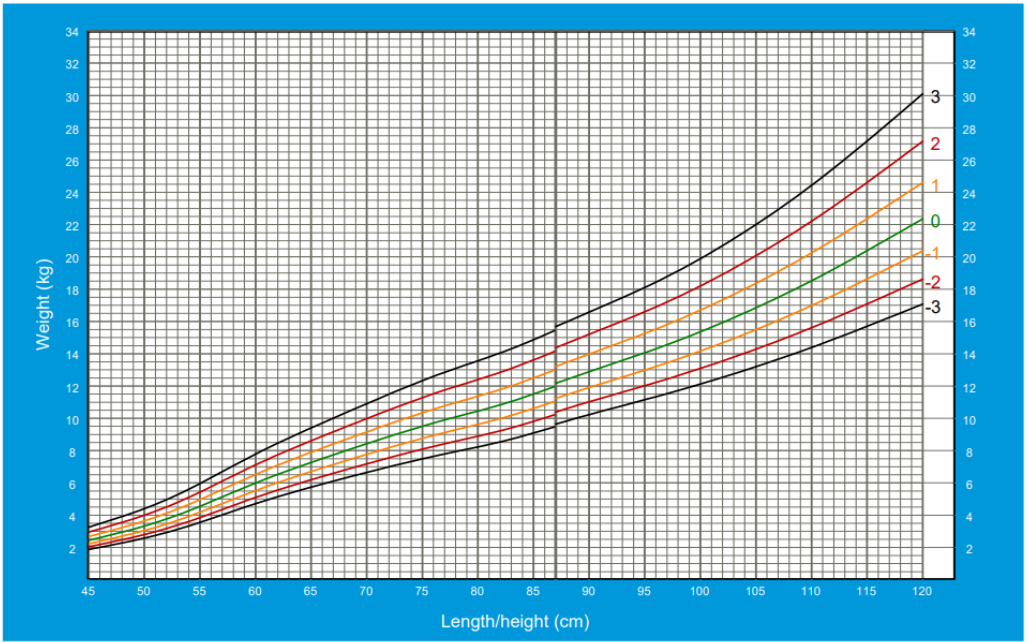
Birth to 5 years (z-scores)



WHO Child Growth Standards

Weight-for-length/height BOYS

Birth to 5 years (z-scores)



WHO Child Growth Standards