

Part IV

Recommended Complementary Food Recipes for the Late Dry and Early Rainy Season (September to December)

Food reserves are relatively low in most households during the late dry and early rainy seasons and the range of available foods is narrow. Households generally have cassava, fish, and some exotic vegetables where dry season gardening is practised. Availability of indigenous vegetables improves gradually one month after the onset of rains.



Foods available to households during the late dry and early rainy seasons

Recommended complementary feeding recipes include:

- Cassava and fish porridge
- Rice and fish porridge
- Fish soup and soft nshima

Furthermore, mothers and caregivers are strongly urged to keep and store some groundnuts for enriching small children's complementary feeds after the November planting season. This will help to improve the range of complementary feeds given to the small child.

Maize and fish porridge



Ingredients:

- 1 cup maize meal
- ¼ cup of pounded fish (big or small fish)
- 2-4 teaspoons shredded/pounded green leafy vegetables
- 4 cups water
- 1 light two-finger pinch of salt
- A little sugar to taste

- a. Lightly roast the dried fish for 3-5 minutes before pounding
- b. Make the fish flour measure ¼ of a cup
- c. Mix maize flour with pounded fish
- d. Add water and mix into a smooth paste
- e. Cook the maize flour-pounded fish mix while stirring
- f. After reaching boiling point, cook for 15 minutes
- g. Add the pounded vegetables and cook for 3-4 minutes
- h. Add salt and sugar to taste



NB: The light roasting of fish helps to reduce the fishy smell and makes the pounding easier

Cassava and fish porridge

Ingredients:

- 1 cup cassava meal
- ½ cup of pounded fish (big or small fish)
- 2 teaspoons of palm oil or salad oil
- 4 cups water
- 1 light two-finger pinch of salt
- A little sugar to taste



- a. Prepare the fish flour as indicated in the maize and fish porridge recipe above
- b. Put 3 cups water and the fish flour into the pot and bring them to boil
- c. Cook the mixture for 5-10 minutes
- d. Add salt and sugar to taste
- e. Add palm oil/salad oil
- f. Add the cassava flour, mix well and serve

Fish soup

(To be served with soft nshima for the small child)

Ingredients:

4 tablespoons of pounded fish (big or small fish)
2-4 teaspoons shredded/pounded green vegetables
2 tablespoons of palm oil or salad oil
1 tomato
½ onion
1 light two-finger pinch of salt



- Prepare the fish flour as indicated in the maize and fish porridge recipe above. Cut the tomato and onion
- Put the oil in a pot and fry the onion and tomato for 3-4 minutes
- Add the pounded fish
- Add the pounded vegetables and salt
- Cook for 3-4 minutes
- Feed the small child with the fish soup and soft nshima



NB: This recipe is highly appreciated and provides an alternative to the cassava or maize with fish porridge

Part V

Recommended Complementary Food Recipes for Late Rainy Season (February to March)

Food reserves start improving during the late rainy season as households start harvesting green maize, fresh beans and fresh groundnuts, pumpkins and gourds. Indigenous vegetables are also readily available.



Foods available to households during the late rainy season

Recommended complementary feeding recipes include:

- Fresh maize and fresh groundnut porridge
- Cassava and fresh groundnut porridge

The fresh maize can be replaced with fresh beans with palm oil or vegetable oil.

Furthermore, the pumpkin/gourd recipe given in Part V can be prepared if the household is still experiencing serious food shortages.

Fresh maize and fresh groundnut porridge



Ingredients:

- 2 medium cobs of fresh maize
- ¼ cup pounded fresh groundnuts (pound, dry for 60 to 90 minutes, then pound again and sieve)
- 2-4 teaspoons shredded/pounded green leafy vegetables
- 2½ to 3 cups water
- 1 light two-finger pinch of salt
- A little sugar to taste

- a. Pound the fresh maize until very mushy
- b. Put the pounded maize in a bowl and add 1 cup of water and mix well
- c. Strain the mixture with a sieve and put the strained pounded maize-water mixture in a pot
- d. Pounding the remaining maize, add another ½ cup of water and strain
- e. Add the pounded fresh groundnut flour
- f. Mix well and cook the maize flour-pounded groundnut mixture while stirring
- g. After reaching boiling point, cook for 15 minutes

- h. If necessary, add some of the remaining water to thin it to the right consistency
- i. Add the pounded vegetables
- j. Add salt and sugar to taste

Option 2 for preparing the fresh maize and fresh groundnut porridge

- a. Prepare the fresh maize liquid as instructed above
- b. Pound shelled fresh groundnuts until you have a sticky paste
- c. Put the paste in a bowl and pour $\frac{1}{2}$ cup of the water into the paste and mix well
- d. Strain the mixture with a sieve into the bowl and pound again the remaining coarse groundnut particles into a smooth paste
- e. Pour another $\frac{1}{2}$ cup of water into the paste, mix well and strain
- f. Take 1 cup of the strained fresh maize liquid and $\frac{1}{4}$ cup of the strained fresh groundnut liquid and mix well in a pot
- g. Cook the maize flour-pounded groundnut mixture while stirring
- h. After reaching boiling point, cook for 15 minutes
- i. Add the pounded vegetables
- j. Add salt and sugar to taste



NB: If fresh groundnuts are replaced with fresh beans, cook the porridge for 20-25 minutes

Cassava and fresh groundnut porridge



Ingredients:

- 1 cup cassava flour
- ½ cup pounded fresh groundnuts (pound, dry a bit, then pound again and sieve)
- 2-4 teaspoons shredded/pounded green leafy vegetables
- 2½ to 3 cups water
- 1 light two-finger pinch of salt
- A little sugar to taste

- a. Shell the fresh groundnuts and pound into rough granules
- b. Dry the partially pounded groundnuts for 60 - 90 minutes
- c. Pound again into a flour and sieve
- d. Put 2 cups water into a pot and add ½ cup of the fresh pounded groundnut flour
- e. Mix well, bring the mixture to boil and cook the mixture for 5 minutes*
- f. Mix the remaining cup of cold water with the cassava flour and make a smooth paste
- g. Add the cassava paste into the pot and mix well
- h. Add the pounded vegetables
- i. Add salt and sugar to taste



* **NB:** If fresh groundnuts are replaced with fresh beans, the fresh beans liquid must be cooked for 20-25 minutes before adding the cassava flour

Options for processing fresh groundnuts

Option 1:

- a. Pound the shelled fresh groundnuts until you have a sticky paste
- b. Put the paste in a bowl and pour ½ cup of the water into the paste and mix well
- c. Strain the mixture with a sieve into the cooking pot and pound again the remaining coarse groundnut particles into a smooth paste
- d. Pour another ½ cup of water into the paste, mix well and strain
- e. Boil the strained liquid for 7-10 minutes
- f. Mix the remaining cup of cold water with the cassava flour and make a smooth paste
- g. Add the cassava paste, pounded vegetables, salt and sugar into the pot and mix well as above

Option 2:

- a. Shell the fresh groundnuts and roast them under low heat for 10-15 minutes
- b. Pound the roasted groundnuts into flour and sieve
- c. Use the roasted groundnut flour as in Part III, Pages 21 -26 – Cassava, Maize, Rice or Sweet Potato with groundnut porridge

Sweet potato and groundnut porridge

Ingredients:

3 medium size sweet potatoes
½ cup pounded roasted groundnuts
2-4 teaspoons shredded/
pounded green leafy vegetables
1 light two-finger pinch of salt
2¼ cups water



- a. Boil 3 medium size sweet potatoes and remove the skin
- b. Mash the sweet potatoes into a smooth paste
- c. Add the pounded groundnuts
- d. Add the shredded vegetables
- e. If necessary (depending on the type of sweet potatoes):
 - add little water to make the paste soft enough for the child; and
 - heat for 3-4 minutes while stirring constantly.

Part VI

Recipes for Feeding Sick Children

Eating well helps to fight infections. Therefore the mother must make sure that the child eats well during illnesses. Furthermore, additional food and water are needed to replace the food and water lost during diarrhoea and vomiting. The food also helps the gut to recover and absorb water.



The sick child needs additional food and plenty of liquids

Infections often reduce appetite. They also increase the need for certain nutrients that are poorly absorbed by the gut and the body uses nutrients faster than usual when repairing the body's defence system. The mother should therefore:

- give her sick child small quantities of food frequently (every 1–2 hours) and encourage the child to eat more at each meal, especially if the child has no appetite;

- give the child soft foods and easy-to-eat foods which the child likes, but these should include energy-rich and nutrient-rich foods, e.g.:
 - porridges enriched with fish, eggs, poultry, meat, etc.
 - mashed bananas, mashed mangoes and other mashed fruits, including commonly consumed local fruits;
 - sweet potato or pumpkin and groundnuts mash or soup;
 - sweet potato or pumpkin and avocado mash ; and
 - soft nshima with okra and pounded groundnuts relish, which is easy to swallow.



Feed the child small amounts of food more frequently

- add extra fat or fatty foods and/or sweet foods, such as sugar or honey, where appropriate;
- give the child plenty to drink (boiled and cooled water, fresh fruit juice, soup or watery porridges) every 1–2 hours; and
- prepare foods and drinks in a clean, safe way to prevent food-borne infections.

If still breastfeeding, the mother should breastfeed the child more often. She can express the milk and feed it from a small cup or spoon if the child is too ill to suckle.

During recovery, the child will often get hungrier than usual and can eat more food and quickly regain the lost weight.

It is especially important that the child who is HIV+ eats a healthy and balanced diet to prevent weight loss and help him/her stay healthy longer. He/she needs plenty of clean and safe water to drink.

Okra with groundnuts

Ingredients:

4 fingers of okra or wild okra
2 tablespoons pounded roasted
or unroasted groundnuts
1½ cups water
pinch of soda
1 light two-finger pinch of salt



- Slice the okra fingers
- Put water into the pot and add a pinch of soda
- Add the sliced okra and cook for 7-10 minutes while stirring
- Add the pounded groundnuts and cook for a further 4 minutes
- Serve with soft nshima.



NB: Preparation of dried wild okra with groundnuts:
Use:

- 4 tablespoons of dried wild okra, and
- 2 tablespoons pounded groundnuts

Rice soup



Ingredients:

- 1 cup rice
- 4 cups water
- 2 tablespoons pounded groundnuts
- 2-4 teaspoons shredded/ pounded green leafy vegetables
- 1 light two-finger pinch of salt

- a. Put the rice and water in the pot and cook
- b. Cover the pot and cook until soft.
- c. Options: add** pounded groundnuts, grated carrots, pumpkin, sweet potato and finely chopped garlic.



NB: Good for coping with lack of appetite, nausea / vomiting, diarrhoea and digestive problems

Sweet potato soup

Ingredients:

1 cup chopped sweet potatoes
¾ cup water
¼ cup pounded groundnuts
1 light two-finger pinch of salt



- Peel sweet potatoes, cut them and cook in little water until soft.
- Mash sweet potatoes and add more water to make soup.
- Add pounded groundnuts and bring soup to boil, stirring often and serve.



NB: Good for coping with lack of appetite, nausea / vomiting. Sweet potatoes can be replaced with pumpkins

Pumpkin and avocado mash

Ingredients:

1 cup of chopped pumpkin
½ of medium avocado pear
Water
A little sugar to taste (optional)



- Peel the pumpkins, cut into small pieces and cook in little water until soft.
- Mash pumpkin and add a little water to make it soft if necessary.

- c. Add mashed avocado, mix well and warm for a few moments.
 - d. Add a little sugar to taste if necessary and serve.
- The pumpkin can be replaced with sweet potatoes or rice.



NB: Not good for people with diarrhoea

Foods to eat: Nausea and vomiting:

- If the child is vomiting, give him/her small amounts of fluids like water and soups frequently. Give him/her soft foods - the child can return to solid foods when the vomiting stops.
- The feeling of nausea may be reduced by the smell of fresh orange or lemon peel, or drinking lemon juice in warm water, herbal tea or ginger drink.
- Dry and salty foods such as roasted groundnuts help to relieve nausea.

Foods to eat: diarrhoea:

- Give the child soft, mashed, moist foods like:



- soft fruits and vegetables, (e.g., banana, mango, papaya, watermelon, pumpkin, gourd, carrots, etc.);
- Vegetable soups;
- fresh fruit juices; and
- Mashed sweet potatoes; and
- Feed the child with refined foods like white rice and refined maize meals.

Annex I

1. Recommended Salt Intake in Household Measures

In the absence of WHO or any other international guidelines, the recommended salt intake levels by the Food Standards Agency, UK, were used as a basis for reducing the salt levels of complementary foods.

Mothers were advised to use one two-finger pinch of salt for every feed, but not more than 4 two-finger pinches in a day. Should the father prepare the porridge, he is advised to take a very light two-finger pinch of salt. **Table 2** below gives the recommended daily salt intakes by age group.

Table 2: Salt Intake Recommended by the Food Standards Agency, UK

Age group	Recommended daily intake expressed in household measures
< 6 months	1-3 pinches of salt
7-12 months	4 pinches of salt or $\frac{1}{8}$ teaspoon
1-3 years	$\frac{1}{4}$ teaspoon
4-6 years	$\frac{1}{3}$ teaspoon
7-10 years	$\frac{1}{2}$ teaspoon
11-14 years	$\frac{3}{4}$ teaspoon
> 14 yrs & adults	$\leq \frac{3}{4}$ teaspoon



NB: Always use salt that is iodised!

2. Common Household Measures Used

- a. 4 two-finger pinches of salt = an eighth of a teaspoon
= 1 gram
- b. 1 heaped teaspoon of sugar = 5 grams sugar
- c. 1 of the common enamel cups (full to the brim) = 375 ml
= 20 tablespoons
- d. 375 ml cup = 180 gm cassava flour
= 250 gm groundnuts

Annex II

Recommended Daily Allowances (RDA) of Energy (kilocalories) for Children Aged 6 to 24 months and Energy Provided by the Complementary Food Recipes

According to the WHO Guiding Principles on Complementary Feeding of the Breastfed Child, the total energy requirements of healthy breastfed children vary with age and these are provided in the Table below. Also provided in the table are the average energy contributions of breastmilk and complementary foods by age.

Age Group of Child	Energy Re-quirements	Average Breast-milk Energy Intake	Energy Needed From Complemen-tary Foods
6-8 Months	615 Kcal	413 Kcal	200 Kcal
9-11 Months	686 Kcal	379 Kcal	300 Kcal
12-24 Months	894 Kcal	346 Kcal	550 Kcal

On the basis of the quantities per serving provided in Table 1 on page 18, and the recommended number of meals per day, recipes in this booklet on average provide:

- 226-271 Kcal to children aged 6-8 months
- 372-376 Kcal to children aged 9-11 months
- 596-626 Kcal to children aged 12-24 months

The recipes therefore provide at least 37%, 54% and 67% of the energy requirements of children aged 6-8 months, 9-11 months and 12-24 months respectively.

In the majority of recipes, 33-40% of the energy comes from fat. In a few cases (mostly the maize/cassava/rice and beans recipes), 22-32% of the energy comes from fat. In all recipes 12 to 15% of the energy is provided by protein.

Breastmilk alone is ideal to start a child's life. It should be fed alone for the first 6 months of life. However, after this period additional foods are needed. The foods that are given in addition to breastmilk are called ***complementary foods***. To make sure that young children grow well and stay healthy, they need ***complementary foods*** that are nutritious and safe and are fed in adequate amounts.

This recipe booklet fills an important gap: it provides information and guidance on the selection and preparation of locally available, nutritious and safe complementary foods that are easy to prepare for feeding infants and young children, aged 6 to 24 months. It is aimed at community nutrition promoters, peer educators and other development agents from the health, community development and agricultural sectors working with family and community groups.



Improved Complementary Foods Recipe Booklet
Family Foods for Breastfed Children
For Luapula Province

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