Pulse Consumption for Improved Nutrition

A Manual for Training Community Leaders

Scaling up Pulse Innovation
ACKNOWLEDGEMENT

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We would like to extend our heartily acknowledgement for contributing and reviewing the Manual.

Contributors

Demmelash Mulalem (MSc), Hawassa University
Menen Zegeye (MSc), Hawassa University
Getahun Ersino (PhDc), University of Saskatchewan
Getenesh Berehanu (PhDc), Hawassa University/University of Saskatchewan
Hiwot Abebe Haileslassie (PhDc), University of Saskatchewan
Kiday Haileslassie Girmay (PhDc), University of Saskatchewan
Addisalem Mesfin (Msc), Hawassa University
Afework Kebebu (MSc), Hawassa University

Reviewers

Carol J Henry (PhD), University of Saskatchewan
Susan J Whiting (PhD), University of Saskatchewan
Sheleme Beyene (PhD), Hawassa University
ABOUT THE TRAINING MATERIAL

The manual provides step-by-step guide to facilitate a two-day training workshop for trainers that includes group activities, focused discussions, brainstorming, and role-playing to introduce issues related to nutrition and health and facilitation skills and practice. The training material constitute five modules; understanding the concept of food groups and diet diversification, understanding nutritional and other benefits of pulses, household food processing techniques, safe food preparation, handling and storage, and basics of Training the Trainer. These issues are discussed in the context of existing cultural and environmental conditions including prevailing gender roles, and other social norms.

Each module is divided into sessions with description of materials needed and preparation required before the session. A guide for activities and notes for trainers are provided in each session.
Welcome, Introduction and Pre-test

<table>
<thead>
<tr>
<th>Session topic</th>
<th>Content highlights/learning objectives</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome, Introduction and Pre-test</td>
<td>At the end of the session, participants will be able to:</td>
<td>1 hour</td>
</tr>
<tr>
<td></td>
<td>• Describe the objective of the training</td>
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<td></td>
<td>• Name fellow participants and trainers</td>
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Preparation and Materials Needed

Preparation

• Write down learning objectives of the training on a flip chart

Materials

• Flip chart and marker
• Pre-test sheets

Activities at the beginning of the Workshop

• Introduce yourself and explain the objective of the training using the already prepared flipchart
• Request participants to ask fellow participant next to them the following question and to report to the group
  o Name, where they live, their expectations
• Explain the role of trainers provided below
• Provide pre-test and explain why it is needed

The Role of the Trainers

As trainers or leaders, you have the opportunity to support good nutrition practices, including the promotion of diet quality and diversity; help address and eliminate barriers to these good practices; and challenge appropriate traditions. The health and wellbeing of mothers and children are particularly critical to addressing household food security, in your communities. It is expected that this workshop will also assist you in providing a supportive environment to encourage good nutrition practice among households, especially women and children.
ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAO</td>
<td>Food and Agricultural Organization</td>
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<tr>
<td>GOS</td>
<td>Galacto-Oligosaccharides</td>
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<tr>
<td>IDRC</td>
<td>International Development Research Center</td>
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<tr>
<td>IYCF</td>
<td>Infant and Young Child Feeding</td>
</tr>
<tr>
<td>OFSP</td>
<td>Orange Fleshed Sweet Potato</td>
</tr>
<tr>
<td>TOT</td>
<td>Training of Trainer</td>
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<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
</tbody>
</table>
# Table of Contents

ACKNOWLEDGEMENT .......................................................................................................................... I
ABOUT THE TRAINING MATERIAL .................................................................................................... II
ACRONYMS AND ABBREVIATIONS ...................................................................................................... IV
INTRODUCTION ...................................................................................................................................... 1
MODULE ONE  Concept of Food Groups and Diet Diversification ....................................................... 4
MODULE TWO Benefits of Pulses ......................................................................................................... 8
  Session 2a: Improving protein qualities of cereals with pulses (Complementary effect)........... 9
  Session 2b: Benefits of pulses/ pulse production................................................................. 11
MODULE THREE Household Pulse Processing and Preparation Techniques............................... 13
MODULE FOUR  Cooking Variety of Pulse Based Dishes ............................................................... 18
  Recipe 1: Broad bean incorporated Barley-Maize based complementary food (Porridge)..... 22
  Recipe 2: Chickpea-incorporated Maize based flat bread for preschool children ............... 24
  Additional pulse-incorporated recipes .................................................................................... 27
  Pulse based/incorporated snacks......................................................................................... 30
MODULE FIVE  Basics of Training of Trainers (ToT) and Communication .................................... 32
  Concept and Meaning of Training of Trainers (ToT).............................................................. 32
  Key Elements of ToT.................................................................................................................. 33
  Communication.......................................................................................................................... 37
NEXT steps and closing......................................................................................................................... 40
REFERENCES ...................................................................................................................................... 41
ANNEXES ............................................................................................................................................. 44
  Annex I: Pre-test/Post-test ........................................................................................................... 44
  Annex II: Session Evaluation Form .......................................................................................... 47
  Annex III: End of Training Evaluation Form ............................................................................ 48
  Annex IV: Recommended Infant and Young Child Feeding /IYCF/ Practices........................ 48
  Annex VI: Nutrition Education Aids ......................................................................................... 50
  Annex VII: Dos and Don’ts of Training .................................................................................... 51
INTRODUCTION

Undernutrition continues to be a global challenge affecting vulnerable populations such as women and young children. A person becomes undernourished due to either sickness or inadequate consumption of food. These are referred as immediate causes of undernutrition (Black et al., 2008). But underlying causes of undernutrition could be lack of enough food in the household (food insecurity) or lack of production of nutritious food crops or limited nutrition knowledge on how to prepare nutritious food for household members or a combinations this and other factors (such as poor healthcare system). Hence, in recent years, nutrition sensitive agriculture is highly encouraged as part of an overall strategy to combat undernutrition globally, particularly in developing countries. Nutrition-sensitive agriculture is one that aims to yield nutritionally rich and diverse foods for consumption at household level (FAO, 2014). Production of pulses is one of such strategies.

Pulses are one of the most extensively used foods in the world and grown in wide variety, making them economically and nutritionally important crops (Mudryj et al., 2014). “Pulses are considered as edible seeds of the plants in the legume family which include dry bean, pea, lentils, chickpea and faba bean” (Curran, 2012). The FAO definition of pulses exclude all legumes that are used for oil extraction (soybean, peanut) and those harvested green for food such as green pea and green bean (Curran, 2012). Consumption of pulses is global and higher in tropical and sub-tropical regions of the world where access to animal source foods is limited (Ofuya & Akhidue, 2005).

Pulses contain relatively low quantities of the essential amino acid methionine. But methionine is present in higher amounts in grains. Grains, on the other hand, contain relatively low quantities of the essential amino acid lysine, which pulses contain in good amount. This is why some vegetarian cultures – in order to get a good balance of amino acids needed for growth and repair – combine their diet of pulses with cereal grains. When one combines, for example beans and rice, the protein quality of the combined food is improved and can be substitute for meat. Hence, combining cereals with pulses improves the protein quality of foods made from them.
Pulse crops have been an integral part of Ethiopian smallholder farming community for many years. Being higher-value crops than cereals, pulses serve as a better source of income and they also contribute toward food security (Ethiopian Export Promotion Agency, 2004). The most commonly grown pulse crops in Ethiopia include faba bean, field pea, chickpea, lentil, grass pea, fenugreek, lupine, haricot bean, soya bean, cowpea, pigeon pea and mung bean (International Food Policy Research Institute, 2010).

Curran (2012) states that pulses are unique in comparison to other plant foods, as they contain higher portions of protein. The protein content of pulses ranges from 17-30 % of dry weight which is twice the amount found in any cereal (Curran, 2012). This high protein content makes pulses an important alternative source of nutrient, particularly among populations who rely on plant based diets as their main source of protein and energy. The protein from pulses is less costly than animal source protein, which can help to overcome the barrier of cost to eating nutritious diet (Rebello et al., 2014).

The nutritional composition of pulses makes them potential crops for improving food and nutrition security in Ethiopian. Micronutrients such as iron, zinc, selenium, thiamin, niacin, folate, riboflavin and pyridoxine are found in pulses (Canadian Food Inspection Agency 2011; United states Department of Agriculture (USDA), Agriculture Research Service 2012; Mudryj et. al., 2014). Pulses are low energy dense and fiber rich foods with a healthy component of mono- and poly unsaturated fat (Lovejoy, 2010; Mudryj et. al., 2014). These characteristic of pulses is important in the prevention and management of obesity, diabetes and heart diseases (Rebello et al., 2014).

Apart from their nutritional qualities, pulse crops have a significant role in improving soil fertility due to their nitrogen fixing capacity. Crop rotation and intercropping pulses with cereals results in significant gain for farmers as it leads to increased production and better soil management (Alvey et al., 2001; Nebiyu et al., 2014). The beneficial properties of pulse to the soil lasts even after it has been harvested (Johnson et al., 2007).
Pulses, combined with different food groups, contribute to a balanced diet. Pulses can be added in a number of food products to enrich the diet and could serve as main meal or snack. It could also be used to prepare complementary food for children older than 6 month. Examples of dishes that contain pulses in Ethiopia include shiro (stew), kollo (roasted), boqolt (germinated) and nifro (boiled).

Many people do not eat pulses for fear of experiencing an increase in gas and flatulence. Legumes do contain galacto-oligosaccharides (GOS), small unabsorbed carbohydrates (fibers) that are rapidly fermented by the gut bacteria, causing gas. Rather than being an unhealthy, emerging research indicates these fibers in legumes may be a good source of food for healthy gut bacteria.

In some people that are particularly sensitive, the gas production may be painful. However, a study from the USA suggests that not everyone is affected and most people adjust just after a few weeks. Healthy adults were asked to eat half a cup (75g cooked) of pulses (pinto beans, black-eyed peas or navy beans) or carrots each day for 8 – 12 weeks. Initially, half the people reported increased gas during the first week of the study and by the second week, 70% or more of the participants felt that any increase in gas had dissipated.

Rapidly increasing pulses in the diet may lead to gas as the body adapts to the higher fiber intake. Gradually increasing intake, regular exercise and plenty of water will help reduce the effects of the increased fiber. Soaking and rinsing pulese before cooking, as well as rinsing of canned pulses, can also reduce the effects.

Pulses for healthy soil, better income and health
## MODULE ONE

### Concept of Food Groups and Diet Diversification

<table>
<thead>
<tr>
<th>Session</th>
<th>Session topic</th>
<th>Content highlights/learning objectives</th>
<th>Duration</th>
</tr>
</thead>
</table>
| 1       | Food groups & diversifying diets | • Understanding the concept of food groups (5-6 food groups)  
• Understanding the basic principles of diversifying diet  
• Identify as many local foods as possible in each of the food groups | (105-120) min. |

### Preparation & Materials needed

#### Preparation
- Before and during the session, do a general review of the concept of food groups and the importance of diversifying diets
- Have a copy of the training material and/or PowerPoint
- Read through the training/education material and familiarize yourself with the process of the session
- Bring anything (including ideas) that might help strengthen the session

#### Materials
- Copies of the training material/PowerPoint/handouts
- Stationary (plain papers, pen/pencil, not books)
- Ready to use flip chart papers
- Audio-visual equipment (projector/screen or white board, if available)
- Pictures/diagrams of different foods (preferably, local)
- Sample food items from local market (as many variety as possible)
Session 1: Food groups and diversifying diets

Getting Started:
[Read or ask participants to read the following introductory remarks for the session to help you start the discussion]

There are different groups of foods. Each food group is a good source of one or more nutrient. For example, fruits and vegetables are good sources of vitamins and minerals; whereas pulses are good sources of plant-based proteins and play an important role in complementing cereals. Therefore, a healthy meal is one that contains a variety of foods from all different food groups in the right proportion.

Activities/interactive learning:
Use a poster or other diagram about food groups and ask any of the following questions to initiate discussion. Encourage mother (participants) to share their knowledge and experience.

- Which of these foods do you locally grow or are readily available? (3-5 minutes)
- Which of the food groups are most expensive? What can you do/ can be done to replace them or what do you think should be done? (~5 minutes)
- Groups activity: Ask participants/trainees to sit in a small group and place the food samples they brought from the local market into different food groups; and discuss if all the samples are placed in the right category; once the participants have finished grouping the food items, comment or ask a nutritionist to comment on the grouping (use the trainer note below to help you while providing comments); [spend~30 minutes for this activity].

Break: (15-20 minutes)

- Why do we have to know about food groups? Is knowledge of food groups important? Why? (3-5 minutes)
- Which foods should we eat every day and which not? Why? (3-5 minutes)
- Which food items/food group should we take in large amount and which in small amount? Why? (3-5 minutes)
- Role playing: Ask volunteers to act as nutrition educators and teach about food groups while the rest participants act as learners (e.g. mothers in rural
communities). As times allows, ask others trainees to take turns and role play a nutrition educator. Provide the resources to help them do the education (poster/diagrams of food groups or local food samples). At the end of the role play, discuss/comment on the way educators introduce themselves, the content and delivery of the message. (Spend ~30 minutes for this activity)

**Note (for the educator/trainer)**
- Understanding the concept of food groups is crucial in order to be able to prepare healthy meals/balanced diet.
- Balanced diet should include energy giving nutrients (carbohydrates, proteins, fats) as well as vitamins and minerals.
- It is difficult to prepare a balanced diet for ourselves or children if we do not know what to balance.
- Balancing our diet requires basic understanding of food groups.
- Foods can be classified in various ways. The following list provide a summary of food groups:
  - **Cereal grains (Starchy staples):** largely consumed as major source of energy (carbohydrates). Foods in this group include gains and none grain starchy staples such as, from cereal grains, maize/corn, sorghum, millet, wheat, barley, teff, rice and, from none grains-based starchy staples (roots and tubers), potatoes, sweet potatoes, cassava, yam, enset (false banana).
  - **Pulses (meat alternatives)/legumes and nuts:** complement cereals and are good source of plant based protein. Food in this group include dried beans, peas, lentils, nuts or seeds such as kidney beans, fava/broad/horse beans, peas, lentils, chickpeas, pigeon peas, peanuts/groundnuts, soybeans, and almond.

**Key nutrition messages:**
- ‘foods are put together into different food groups based on the nutrients they provide the most’
- ‘Learning the different food groups helps you prepare a balanced diet’
- ‘A healthy meal/diet is one that includes variety of foods from the different food groups’
- ‘Variety is the key to healthy diet’
Meat, dairy, poultry and Fish (animal source foods): Known for their rich source of good quality protein (complete protein). They include all animal source foods such as any flesh/organ meat, fish, poultry (egg, chicken), dairy (milk and milk products).

Fruits: Fruits include orange, mandarin, banana, avocado, guava, pineapple, apple, lemon, mango, papaya, strawberries, watermelon; Fruits are good sources of vitamins and mineral that improves our body’s defense.

Vegetables: are also great sources of vitamins and minerals necessary for the healthy functioning of our body. Food from this group include carrots, pumpkins, squash, OFSP, beets, green beans, broccoli, lettuce, Swiss-chard, kale, green pepper, cauliflower, spinach, tomatoes, garlic, onions… etc.

Fats, oils, sweets & spices/condiments: Fats and oil concentrated source of energy usually consumed in small amount and examples include butter, ghee, lard, margarine, palm oil, vegetable/nuts oil (corn/maize, avocado, coconuts, sunflower, soybean, canola, groundnuts, almond, olive); sweets (sweetened soda, sugary juice, candies/cookies/biscuits, chocolate, baklava), condiments (chilies, herbs, spices)

In addition, drinking the equivalent of 3 liters of clean water per day is also vital as part of healthy nutrition.

Key message for the session

- A healthy meal/diet is one that is diverse, having a variety of foods from the different food groups.

In closing: Ask participants what kind of healthy meals they can prepare from locally available foods.
### MODULE TWO
**Benefits of Pulses**

<table>
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<tr>
<th>Session</th>
<th>Session topics</th>
<th>Content highlights/learning objectives</th>
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</thead>
</table>
| 2a      | Improving protein quality of cereal-based foods with pulses (Complementary effect of pulses) | • Understand **complementary effect** of pulses (how protein quality of cereals can be improved by combining them with pulses crops);  
• Understand the important contribution of pulses as **good sources of protein** and micronutrients; | ~50 minutes |
| 2b      | Other benefits of pulses | • Understanding the role of pulses in improving soil fertility, saving the money for other household needs which would otherwise be spent for purchase of artificial fertilizer;  
• Understand Contribution to sustainable environment;  
• Source of cash income through selling of pulses as they are high value crops;  
  - The cash income used to purchase other main staples, hence contribution to food security; | ~40 minutes +  
~15-20 minutes break |

### Preparation & Materials needed

**Preparation**

- Before the session, do a general review about pulses as component of the food groups and their important roles in the nutrition of households and other areas;
- Have a copy of the training material and/or power point;
- Read through the training/education material and familiarize yourself with the process of the session;
- Bring anything (including ideas) that might help strengthen the session;
Key nutrition messages:

- 'Pulses are excellent sources of protein (twice or more as much protein as cereals.)'
- 'Pulses, low cost but healthy protein'
- 'Improve protein quality of your diet by combining pulses with cereals.'

Materials

- Copies of the training material/PowerPoint/handouts
- Stationary (plain papers, pen/pencil, not books)
- Ready to use flip chart papers
- Audio-visual equipment (projector/screen or white board, if available)
- Pictures/diagrams of different pulses/legumes (preferably, local)
- Sample pulses or pulse-based foods from local market (as many variety as possible)

Session 2a: Improving protein qualities of cereals with pulses (Complementary effect)

Getting started: [Read or ask participants to read the following introductory remarks for the session to help you start the discussion.]

Growing children (and also adults) need protein for building and maintenance/reparation of their body. Animal source foods are good source of quality protein (complete protein) but they are mostly expensive for most families to include them in their regular diet. Foods from pulses and cereals can be best alternative sources for meeting protein needs and are relatively cheap.

Activities/interactive learning:

Use the poster/diagram and ask any of the following questions to initiate discussion. Encourage mother (participants/trainees) to share their knowledge and experience.

- Do you think we can make complete protein (or good quality protein) by combining only plant source foods, without including any animal source food? If yes, how? Or if no, why not? (~5 minutes)
- OR, ask the following question as an alternative
- How can we make alternative and reliable protein source by combining food groups?
• What do you rely on to meet the protein needs for your families? Ask participants to come up with as many foods as possible and discuss if the suggested foods are really good sources of protein. (~5 minutes)
• Are the food combinations you see on the poster/diagram familiar to you? Discuss (3-5 minutes)
• What other food combinations of locally available foods can you come up? Do you think the foods you mentioned have complete protein? (~5 minutes)
• Role play: ask a volunteer to act as nutrition educator try to teach the concept of complementary effect cereal and pulses to improve protein quality. Let the rest of the class act as participants from a community. Volunteers can use diagrams and/or real foods samples brought for the group activity. Discuss and comment on how the education went. (~30 minutes)

**Break:** 15-20 minutes

**Note for the educator/trainer**
• the basic principle in the combinations of most foods displayed is that combining pulses/legumes with cereals makes a complete protein;
• Pulses, combined with cereals, can be alternative sources of protein with much lower cost than animal source foods.
• Besides the protein, they can be good sources of healthy calories and micronutrients (e.g. iron & Zinc)

**Key message for the session**

❖ **Combining foods from cereals with pulses (e.g. kidney beans) makes a good quality protein (complete protein)**

**In closing:** Ask participants (mothers) what kind of foods they make from beans and cereals. Encourage them to feed their children and other members of the family by combining foods based on today’s lesson.
Session 2b: Benefits of pulses/ pulse production

Getting started: [Read or ask participants to read the following introductory remarks for the session to help you start the discussion.]

Pulse crops include different varieties of beans (haricot bean, kidney bean), fava-bean, chick pea, lentil, peas and others. Production of pulses has benefits that go beyond just good nutrition. Pulses have nutritional, health and environmental advantages. Understanding the benefits of pulses is what forms the bases for promotion of pulse production and consumption in your community.

Activities/interactive learning:
Use the poster and ask any of the following questions to initiate discussion. Encourage mother (participants) to share their knowledge and experience.

- What benefits of pulse production can you mention, other than their use as food item in the household? (Encourage participants to mention as many benefits of pulses as they can). (Spend ~10-15 minutes)
- For what purposes are pulses mainly grown in your community, or are they grown at all? (Hint: for home consumption as food, for market). (~3-5 minutes)
- Role playing: ask volunteers to use poster or diagram and conduct an education on all potential benefits of pulse for the rest of participants who may act as community members. Use the trainers note ensure that all potential benefits of pluses are captured. Spend ~20 minutes.

Key nutrition messages:
- ‘Great to nourish your body (sources of protein, dietary fiber and micronutrients)’
- ‘Improve the protein quality of your staple food by adding some pulses.’
- ‘Low glycemic index food (great for managing blood sugar)’
- ‘High value crops – sources of cash income’
- ‘Natural fertilizers- environmentally sustainable; reduce cost of artificial fertilizer’
- ‘Great crops for food security and nutrition security (cash income, produced with low farm inputs, resist moisture stress) short maturing!’
Note for educators/trainers

- Pulses are good sources protein, dietary fiber & other micronutrients (zinc, iron, and folate).
- Their protein quality is enhanced when used along with cereals (the missing essential amino acid in cereal is found in pulses and vice versa; therefore these food groups when used together, complement each other to make a complete or good quality protein.)
- Pulse foods are of low glycemic index (i.e. they release their sugar slowly into the blood during digestion); hence they are beneficial to control blood glucose levels (particular significance to people with diabetes).
- Pulses are high value crops so they can be cash-crops for farming households and hence support the household cash income
- As legumes, they are nitrogen fixers; hence they improve the soil fertility by adding nitrogen into the soil they are grown. They require low farm inputs (fertilizer, moisture)
- They also minimize fertilizer expenses since they naturally improve the soil nitrogen
- They complement cereals; also play important role in household food security;

Key message for the session

- Pulses are nutritious, good for health and contribute to healthy environment by making their own natural fertilizer.

In closing: Encourage participants to appreciate the numerous benefits of pulses. Ask them if they would consider improving their production and consumption of pulses at the household level.
## MODULE THREE
Household Pulse Processing and Preparation Techniques

<table>
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<tr>
<th>Session</th>
<th>Session Topic</th>
<th>Content highlights/learning objectives</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Preparation of pulses before cooking</td>
<td>At the end of the session, participants will be able to&lt;br&gt;- Describe alternative types of processing methods before cooking pulses&lt;br&gt;- Explain the importance of pulse processing methods and their respective nutritional benefit</td>
<td>1 hour</td>
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</tbody>
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### Preparation & Materials needed

**Preparation**
- Read the session and familiarize yourself with the session activities
- Write the objectives of the session on a flip chart
- Write key messages on a piece of card (one key message per card that is equivalent to the number of participants)

**Materials**
- Prepare flip charts and markers
- Card

### Getting started:
In order to get the most nutritional benefit out of pulses, they need to be processed properly.

### Activities:
- Explain session topics and post the objectives of the session
- Ask participants how they or other community members process pulses before cooking them
- Use the trainer note to explain the preparation methods along with their respective nutritional benefits
- Distribute key message cards and ask participants to brainstorm the meaning of the key message

### Key nutrition messages:
- Selecting the proper pulse/food processing technique determines the amount of nutrient/health benefit we could get from the pulses/foods available in the household.
Trainer note: Pulses processing

Food processing involves techniques of converting raw materials into semi-finished or finished products that can be consumed or stored. Food can be processed at different levels including home-based food processing and industrial level. Industrial food processing could be at the microscale or large scale.

The advantages of processing pulses include:

- Transformation of raw produce into edible forms
- Improving digestibility of foods
- Improving the nutritional quality of foods
- Reducing and eliminating anti-nutritional factors
- Improving consumer appeal and acceptability of foods
- Destruction of food enzymes that could cause food spoilage thus extending shelf-life
- Deactivation of spoilage and pathogenic microorganisms in the food products
- Serving as a means of income generation

Pulses could be processed in a number of ways before cooking; some of them are listed below

- Soaking
- Germination
- Grinding to flour
- Dehulling
- Splitting
- Fermentation

Why do we need to prepare pulses before cooking?

- Cleaning and sorting will help to increase the quality of pulse-based-food product
- Soaking most dried pulses will help to reduce cooking time (Some need little or no soaking such as lentils)
- Soaking, germination and fermentation helps to maximize the nutritional value of pulse-based dishes
How are pulses prepared before cooking?

Sorting and Cleaning

- The first step before cooking pulses is cleaning which helps to remove useless or harmful foreign matters.
- Pulses are sorted and cleaned to remove dirt, stones, chaff, broken and spoiled seeds and other foreign materials. Cleaning can be done by dry or wet methods. Dry cleaning is intended for pulses that will be stored and wet cleaning is usually done by washing with water before cooking or processing.

Soaking

- Put the clean pulse in a utensil and pour clean water and leave it overnight.
- Discard the soaking water when you are ready to cook.
- Different seeds are soaked in water for different periods of time. Soaking in water allows the seeds to absorb water, to decrease and eliminate anti-nutritional factors in legumes.
- However, soaking for long periods of time has been found to reduce nutritional quality of legumes through leaching of nutrients into the soak water.

Germination

- Put the clean pulse in a utensil and pour clean water and leave it overnight (soaking is the initial step for germination).
- Discard the soaking water.
- Leave the soaked seeds to germinate for 1-3 days (you could spread the seed on a clean cloth with a cover or you can put in a bottle with perforated cover and leave it upside down to dribble the remaining water).
- Clean the seeds every 12 hours pouring a clean water.
- Discard the water and leave the seed to germinate as described above.
Germination is useful to enhance digestibility, reduce flatulence, and reduce anti-nutrients. Micronutrients such as iron and zinc from germinated pulses can be better absorbed by our body compared to unprocessed pulses.

Dehulling

- Dehulling is removing the outer covering of the seeds which helps to improve the nutritional composition of the seed.
- De-hulled legumes may be wet-milled or dry-milled. Milling is a size reduction process of the seeds into smaller particle forms.
- Wet-milling of seeds will produce a paste while dry–milling results in flour production.
- Different types of equipment have been designed for milling for household or industrial purpose.

Splitting

- Splitting is one of the commonly used household processing technique

Grinding to Flour

- Pulse could be ground using a traditional mill in a household or by millers. It is important to prepare the seed by soaking or germinating before milling to increase the nutritional benefit of the pulse-based product that we will prepare from the pulse flour.
Fermentation

- Pulse could be used for baking; it is important to ferment the flour to help maximize nutritonal benefit of the pulse-based product
- This process increases the digestibility of plant proteins and also reduces anti-nutritional factors.
- Fermentation enhances flavor, color and texture of pulses. Changes in these attributes are major stimuli in development of fermented pulse products.
- It reduces heat stable anti-nutritional factors such as phytate.

![Fermentation Images]

Post Processing

After processing pulses can be roasted, boiled, baked or used in different food products. Roasting, boiling and baking of the processed pulse can help to improve the taste and edibility of pulses. It is could contribute to reduce and eliminate remaining anti-nutritional factors.
MODULE FOUR

Cooking Variety of Pulse Based Dishes

The Three Recipes Identified By the IDRC Project

<table>
<thead>
<tr>
<th>Session</th>
<th>Session Topic</th>
<th>Content highlights/learning objectives</th>
<th>Duration</th>
</tr>
</thead>
</table>
| 4       | Cooking variety of pulse based recipes/dishes  
(The three identified recipes by the IDRC project) | At the end of the session, participants will be able to  
- Cook variety of pulse-based recipes/dishes  
- Conduct a cooking demonstration for pulse-based recipes/dishes | 1:30 hour |

Preparation and materials

Preparation  
- Read the session and familiarize yourself with the session activities  
- List and prepare the required ingredients and cooking utensils for the recipes that the trainees will cook

Materials  
- Prepare flip charts and flash card and markers

Getting started: [Pulses can be used to make a variety of healthy and delicious dishes. It is important to safely handle food during preparation, cooking and storage to prevent food borne illnesses]
Activities

• Explain the topic and objectives of the session
• Revise the benefits of pulse by asking participants and using the trainer’s note
• Ask participants to write down factors that could affect safety of food on a flash card
• Collect and post the cards where it could be visible by all participants
• Describe safe food handling techniques using the trainer’s note
• Ask participants common pulse based dishes in their community
• Divide participants into small groups and assign a recipe for each group to cook
• Provide recipe sheet
• After they finish cooking, let them taste it and provide feedback
• Discuss about safe food storage to close the session

Note for trainer/educator:

Revision on benefits of pulse

• Pulses are an excellent food choice that provide a wide variety of health benefits
• Pulses are particularly important for people who do not get adequate protein from meat, fish or dairy products (they can serve as meat alternatives).
• Pulses provide substantial amounts of vitamins and minerals. Some of the key vitamins and minerals in pulses include iron, potassium, magnesium zinc, folate, thiamin and niacin.
• Pulses have essential amino acid we could not get from cereals, thus blending pulses with cereals is important to have a better quality protein that contains all essential amino acids in appropriate amounts(e.g. white haricot bean with maize).

Note on cooking pulses and safe food handling:

• Recipes are provided below, it is important to understand that the recipe could be further modified based on availability and taste preference of the household. For example, you can replace the cereals and pulses used in the recipes with what is available in your household (haricot bean with maize could be replaced by chickpea and maize if that is what is available in your household).

Key nutrition messages:

✓ Wash your hands before preparing food, before eating food, after using toilet and after eating food.

✓ Clean hands are essential for working in a kitchen environment.
• During food preparation, food handlers need to practice good personal hygiene and use clean surfaces, equipment, and utensils when preparing/cooking foods.
• Sanitation and personal hygiene are important for keeping food safe.
• Clean hands are essential for working in a kitchen environment.
• It's very easy for bacteria to spread from the food we touch to door handles, plates, cutlery and so on.
• Hand washing is one of the best ways to prevent the spread of germs between people.

Food safety for vulnerable groups
- Some groups of the population are considered as the most vulnerable group due to their high risk of contracting food borne illness. Infants and young children are among these groups.
- The contamination of complementary food along with children trying to put everything in their mouth and touching different things when they start crawling contributes to diarrheal diseases in children 6 months and older.
- Safe food preparation and hygienic feeding practices are essential to reduce the risk of contamination and illnesses.
  o Wash your hands with soap and water before preparing food, before eating, and feeding young children.
  o Wash the child's hand if he or she is able to feed by him or her self
  o Feed your baby using a clean cup and spoon; never use a bottle as this is difficult to clean and may cause your baby to get diarrhea.

What needs to be considered during food storage
- Protect kitchen areas and food from insects, pests and other animals
- Store foods in covered containers
- Don't store for a long period of time
- Cook small amounts to avoid long periods of storage and spoilage
- If the moisture content in a product to be stored is low enough; microorganisms will be unable to grow, provided that the moisture in the storage room is kept low.
- Moisture should therefore be prevented from entering the store.

Key nutrition messages:
  o Cover your food all the time
- Many factors are responsible for the deterioration of products after harvest, the composition and behavior of food grains vary as the grains are constantly being exposed to different physical factors such as temperature, humidity, oxygen supply and biological agents (bacteria, fungi, insects and rodent).

**General Safe Food Handling Tips**

- Wash your hands after using toilet, handling raw and cooked foods, taking breaks, coughing, sneezing or blowing nose, touching your hair, handling pets or animals, scratching, handling refuse or waste materials
- Keep fingers away from your face, mouth, hair, skin and other parts of the body.
- Don't brush or comb your hair when you are near food.
- Don't cough, sneeze, or spit near food and avoid touching your nose, teeth, ears and hair, or scratching when handling food.

**In closing:** Mention themain points to remember for clean and safe preparation which include clean hands, clean utensils, cook thoroughly, separate raw and cooked, safe water and food and safe storage.
Recipe 1: Broad bean incorporated Barley-Maize based complementary food (Porridge)

Ingredients:
- Broad bean
- Maize
- Barley
- Iodized salt
- Oil

Procedure for producing broad bean flour
Before starting the processing of broad bean, it is advisable to have a seed with good quality.

- Tips for selecting a good quality broad bean
  - It should have a clear bright color
  - Unbroken - not dusty
  - Even sized
  - Older drier pulses need longer cooking & tend to fall apart during cooking
  - Pick over carefully to remove grit and husks

Procedure for producing broad bean flour
1. Broad bean
2. Sorting and cleaning
3. Washing and soaking for 12 hrs
4. Germination for 24 hrs
5. Rinsing and sun drying
6. Roasting and milling
7. Broad bean flour
8. Packing and storage

(Source: Ghavidel and Prakash2007)
Procedure for producing maize flour
1. Maize
2. Sorting and cleaning
3. Washing and soaking for 4 hrs
4. Sun drying
5. Roasting
6. Milling
7. Maize flour
8. Packing and storage
(Source: Akingbal et al, 1997)

Procedure for producing barely flour
1. Barely
2. Sorting and cleaning
3. Washing and soaking for 8 hrs
4. Removal of barn layer
5. Sun drying
6. Roasting and milling
7. Barley flour
8. Packing and storage
Procedure of cooking porridge
- Unprocessed seventy gram of barley and 30 g of maize flour was measured and blended to have uniform mix
- About 300 ml of water is boiled in oven and the ingredients will be added while starrin it
- Add oil cooked for 15 minutes and put out of the oven
- Finally, Iodized salt will be added

Recipe 2: Chickpea-incorporated Maize based flat bread for preschool children

Ingredients:
- Composite flour (maize and chickpea flour)
- Iodized salt
- Luke warm water

Procedure for producing maize flour
1. Maize
2. Sorting and cleaning
3. Washing and soaking for 4 hrs
4. Sun drying
5. Roasting
6. Milling
7. Maize flour
8. Packing and storage
   (Akingbal et al, 1997)
Procedure for producing chickpea flour

1. Chickpea
2. Sorting and cleaning
3. Soaking for 12 hrs
4. Sun drying for 2 days
5. Roasting
6. Milling
7. Chickpea flour
8. Packing and storage

Procedure of cooking flat bread

- The composite flour with different proportion were put and mixed together in three bowls: maize and Chickpea flour and one bowl with maize flour only
- The blended flour in each bowl were sieved three times by similar sieve having series opening of 1.00 mm
- Salt was added and mixed during the preparation
- Water was added a little at a time while mixing and kneading the dough until it became smooth
- Each portion was shaped into a smooth loaf and baked in a hot oven
- The flat bread samples were removed from the oven and allowed to cool down
- Finally the flat bread samples were sealed separately in a black polyethylene bags
Recipe 3: Chickpea stew

Ingredients:
- Two cups chickpea
- Six cups water
- Two cups red onion
- Oil
- Iodized salt

Procedure of cooking chickpea stew

- Wash chickpea
- Fry onion
- Add oil and stir until the onion turns brown
- Boil the pre-soaked or germinated chickpea
- After boiling, remove water and mash the chickpea
- Add on the fried onion
- Take off the stew and add iodized salt

Additional information
You can mash the boiled chickpea and combine it with the prepared onion specially if feeding to infant and children. The chickpea need to be prepared by soaking or germinating in advance to cooking.
Additional pulse-incorporated recipes

Recipe 1: White haricot Bean and Maize Based Complementary Food (Porridge)

Ingredients:
- White haricot bean
- Maize
- Oil
- Egg if available
- Vegetables, if available
- Fruits, if available
- Iodized salt

Key nutrition messages:
- Enrich your porridge by adding fruits and vegetables available at your household.
- Add iodized salt after you finish cooking

Procedure for producing haricot bean flour
Before starting the processing of haricot bean, it is advisable to have a seed with good quality.

Tips for selecting a good quality haricot bean

- It should have a clear bright colour
- Unbroken - not dusty
- Even sized
- Older drier pulses need longer cooking & tend to fall apart during cooking
- Pick over carefully to remove grit and husks

After selecting a good quality haricot bean:
1. Clean it thoroughly (remove defective seeds, stones, or any foreign matter)
2. Wash it with a clean water
3. Soak it overnight (12 hrs)
4. Drain the water
5. Germinate it for 48 hours
6. Rinse and then sundry it (facilitates removal of hull and moisture)
7. Roast it for 5 minutes
8. And then mill it

Procedure for producing maize flour
Do the same as above to select a good quality maize grain, then get the maize flour by following the procedures listed below:-

1. Cleaning (removing defective seeds, stones, or any foreign matters)
2. Soak it overnight (12 hours)
3. Wash it thoroughly and let it dry by sun
4. Roast the dried maize for 5 minutes
5. And then milling it

**Procedure of cooking porridge**

1. Boil water (use milk if available)
2. Add the mixed flour of haricot bean and maize (70 g of maize with 30 g of white haricot bean flour) and stir it
3. Add egg if available
4. Add cooked vegetables
5. Finally, add the iodized salt after cooking

**Recipe 2: Maize-kidney bean-pumpkin based complementary food**

**Ingredients:**

- Maize
- Kidney bean
- Pumpkin (could be replaced by kale, sweet potato, avocado or papaya)
- Oil
- Iodized salt

**Maize preparation:**

- Clean it thoroughly (remove defective seeds, stones, or any foreign matter)
- Wash it with a clean water
- Soak it for 6 hours
- Drain the water
- Germinate it for 24 hours
- Rinse and Sundry it partially for about an hour
- Pound lightly then mill it

**Kidney bean:**
• Clean it thoroughly (remove defective seeds, stones, or any foreign matter)
• Wash it with a clean water
• Soak it in potable water for 6 hours
• Drain the water
• Germinate it for 48 hours
• Rinse it
• Sundry it partially for about an hour
• Dehull it
• And then mill it

Pumpkin:
• Peel it
• Chop it in to pieces
• Boil it
• And then mash it

**Procedure for preparing porridge**
1) Boil water (use milk if available)
2) Add the mixed flour of kidney bean and maize and stir it
3) Add egg if available
4) Add the mashed pumpkin
5) Add cooked vegetables
6) Finally, add the iodized salt after cooking

Maize-kidney bean-pumpkin porridge could be modified to make Kocho-kidney bean-pumpkin Porridge. Follow the same procedure while replacing kochco for maize; sundry the kocho, crumble it manually and sieve it to reduce the fiber.

**Key nutrition messages:**
- *Eating pulses with a grain, such as wheat, barley, rice, and sorghum ensures a high quality protein.*
Pulse based/incorporated snacks
Recipe 3: Roasted Chickpea Snack

Ingredients

- 4 cups cooked chickpeas or
- 540 ml chickpeas rinsed and drained
- 45 ml oil
- Preferred spices (garlic, peprr, berebere) to taste

Cooking procedure

1) Preheat oven/local roasting material

2) Combine all ingredients in medium bowl and spread onto parchment paper or greased cookie sheet.

3) Bake for 30 minutes. Stir.

4) Bake another 20 minutes, stirring every 5 minutes.
Recipe 4: Black Bean (Chickpea) and Corn Salad

Ingredients
- 540 ml black beans or chickpea (boiled), rinsed and drained
- 2 cups corn (boiled)
- ¼ cup lemon juice
- 2 medium tomatoes, chopped
- ½ cup onion, chopped
- 1 tsp ground cumin
- ½ tsp each salt and pepper

N.B: Combine all ingredients in a large bowl and serve.

Other possible pulse based snacks
- Germinated chickpea and kidney bean (Used as “boqolti”)
- A mixture of roasted chickpea and roasted barley (commonly used as “kolo”)
- Cooked broad bean with a sauce (commonly called “ful”)

Key nutrition messages:
- Pulse can also be fed to children, for pregnant and lactating mothers as snacks between main meal as they need extra meal
MODULE FIVE

Basics of Training of Trainers (ToT) and Communication

<table>
<thead>
<tr>
<th>Session</th>
<th>Session topic</th>
<th>Content highlights/learning objectives</th>
<th>Duration</th>
</tr>
</thead>
</table>
| 1       | ToT concept, principle, objective and elements    | • Describe the concept and meaning of ToT and communication  
          |                                                   | • Describe the basic principles and objectives of ToT and communication                                | (30-40) min.|
| 2       | Key elements of ToT                               | • Identify the key elements of ToT and communication                                                     | (40-60) min.|

Concept and Meaning of Training of Trainers (ToT)

Training has been defined as "The systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job". Training has also been defined as "a planned process to modify attitude, knowledge or skill behavior through learning experience to achieve effective performance in an activity or range of activities. Its purpose in the work situation is to develop the abilities of the individual and to satisfy current and future manpower needs of the organization"

Training of trainers is a form of training imparted to an individual with a view to preparing him/her for his/her future role as a trainer. This is a process which aims to develop his/her capabilities and capacities of imparting training to others as a skilled professional. Besides, ToT also aims to help organizations to build their own cadre of trainers. Thus ToT has a dual role to play: the individual growth and the organizational growth.

The focus of ToT is not only to build a cadre of trainers, but also to develop necessary orientation, awareness and abilities to perform a catalytic role as facilitators of change.

Objectives of ToT
Specifically ToT aims at the following:

i. To use training as a tool of social change.

ii. To help organizations/agencies in their efforts of human resource development for accelerating growth oriented participatory action at the local level.

iii. To promote the activity of training as an integral element of people’s organization.

iv. To prepare the participants as trainers for field level training activities.

v. To develop necessary skills in designing and organizing training programs.

vi. To provide an understanding of the principles and practices of the training process.

vii. To sharpen communication skills of the trainer.

viii. To build up the trainer’s skills regarding the organizational management aspect of the training program.

**Key Elements of ToT**

There are five basic elements of ToT, which play a major role in shaping the structure and strategy of the training process. They are:

I) Training goal

II) The trainer/resource person

III) Target group, the trainees

IV) Training course and

V) Training approach

**Training Goal**

Training of Trainers is characterized by a definite goal orientation. The major thrust is not so much on ‘transfer of information or expertise” as on “sharing of ideas and experiences”. Also, the ultimate objective of training is not so much oriented towards the gain in knowledge as on “change in ideas and attitudes”. Likewise, the major thrust of the activity is not so much to produce skilled professionals or efficient workers as to prepare a cadre of facilitators of change.

Unlike other training programs where the objectives are outlined in terms of the requirements of a particular job or employment, in ToT it is the user’s need that provides the base for the
structure and strategy of the training. It is, therefore, essential that the training design of ToT is outlined in the light of the outcome of a training needs assessment.

**The Trainer/ Resource Person**

Although the place and role of a trainer has special significance in all types of training, yet, in ToT the trainer is the key element. Some of the important roles which a trainer is expected to play are:

- i. Understanding the training needs of the target group.
- ii. Developing the outline of the course contents in accordance to the requirements of the trainees.
- iii. Preparing the subject matter.
- iv. Understanding the principles and practices of suitable training methods.
- v. Arranging training infrastructure.
- vi. Conducting the training.
- vii. Assessing the impact of the training.
- viii. Taking necessary follow-up action.

Sometimes the efforts of a trainer need to be supplemented by a resource person, who may belong either to the same organization or may be from an outside agency. In both cases, however, the competencies and the responsibilities of the trainer will remain the same.

Also the trainer should conduct the following activities before the training session is conducted:

- Introduce the trainers and participants to each other.
  - Introducing Trainers and Participants
  - Establishing Norms and Housekeeping
- Define the participants’ expectations of the course
  - Define Participants’ Expectations of the Course:
    - What do you hope to accomplish during this course?
• Do you anticipate any difficulties during the course?
• What will you miss at home?
• What will you miss at work?
• How do you think this training will help you at work?

❖ Determine the trainees’ needs.

✓ Provide suggestions for effective participation
✓ Pretest

❖ Introduce the goal of the training and the unit objectives.

**Target Group - The Trainees**

ToT puts a lot of emphasis on trainees. It is neither possible nor desirable for any trainer to know everything about all of them. What is relevant is to know what concerns the training program. For example, it is useful to know the characteristics of the trainees and their potentialities to undertake the tasks for which they are being trained.

Broadly speaking it will be worthwhile to know the physical, socioeconomic, intellectual and psychological characteristics of the trainees. In other words, the background information about physical factors such as age and key socio-economic characteristics such as caste and income, intellectual traits such as level of knowledge, skill and language and psychological characteristics such as attitudes and values, if known in advance, help the trainer to plan the contents and approach of the training more realistically.

**Training Course**

As pointed out earlier, it is on the basis of the outcome of a training needs assessment that the course contents and their sequencing is to be outlined. As regards the subject matter to be covered under each course, the trainer/resource person should make use of different types of materials according to his/her own experience, the expertise of subject matter specialists and experience sharing with fellow professionals. Once the material on the subject matter has been collected through different sources, the next step, to design the course contents, is to determine
the sequence of lessons in a particular course. Such sequencing can be made on the basis of some major criteria like job performance order, logical order and psychological order.

While determining the sequence of tasks and the elements within a task, some of the considerations that need to be kept in mind are:

a) Easily learned tasks should be placed early in the course.

b) Broad concepts and technical terms which have applications throughout the course should be introduced at an early stage.

c) The concept or skill in the task which is most likely or most frequently to be used should be properly placed in the course contents.

d) The task which is difficult to learn and the elements and concepts in areas where transfer or related skill is not likely to occur should not be ‘overloaded’ in the course.

e) Complex or cumulative skills should be placed relatively late in the course sequence.

These are only some of the guiding principles to ensure the designing of a course. It is for the trainer to make the best use of only such guidelines that suit the proposed course most.

**Training approach**

The use of proper training approach is a prerequisite condition of the effectiveness of conducting a training program. The selection and use of such approaches/methods becomes all the more crucial as the participatory nature of the activity demands that the training should be not only educative, but equally stimulating. Use of a single most effective approach or combination of approaches promotes greater interaction between the trainer and the trainee and, hence, creates a productive learning experience. Although there may be various approaches of imparting training, yet, mainly two approaches are adopted. They are based on i) instructional methods, and ii) group participation methods. While the instructional approach mainly uses lecture method under a classroom situation, the group participation approach uses such methods as discussions, workshops, seminars, field trips and study tours.

None of the above mentioned approaches is singularly suitable or sufficiently effective for any training activity. Every approach has its own advantage or disadvantage. It is from this angle that
there is a need to make proper selection quite carefully, taking into account a number of factors and go for the most appropriate one. In most of the cases, however, the training programs have to employ a combination of approaches. The choice for selecting suitable training approach/approaches depends on certain basic assumptions, as under:

a) The trainees have different backgrounds regarding their past knowledge and work experience which have significant bearing on their learning process.
b) The trainees learn most in a situation that encourages their participation in the learning process.
c) No single approach is effective enough to ensure the maximum impact in terms of learning experience.
d) Effective use of a particular approach depends on the intelligence and skill of the trainer.
e) The trainer, to whatever extent skilled and intelligent he or she may be, has to understand that the efficiency of the job performance depends on one’s continuous growth in knowledge and experience. For this he/she has to first ‘de-learn’ in order to learn the skill of seeking active involvement of the learners in the learning process during the course of training. Then only the process of learning the principles and practices of training starts. This process of learning has to continue throughout his/her professional career as a trainer.

Communication

Definition and Purpose
- The process of sharing ideas, information, knowledge, experiences, feelings and attitudes among people
- It is an attempt to try to establish commonness or common understanding between two parties
- Facilitates creation of awareness, acceptance and action at individual, small group and inter-group levels.
- Help to educate and train, inform, entertain, influence, persuade and/or motivate those who are part of the communication loop.

Basic elements of the communication process
• The sender – the one who performs the first stage of communication - the source
• The message – an expressed feeling, idea or information
• The channel – the medium through which the message is transmitted to a receiver
• The receiver – the person or persons whom the message is intended to reach

Approaches to (types of) Communication

One-way communication

• The sender talks while the receiver passively listens (the interests of the receiver are ignored)

Sender                        Message                  Receiver
[Encodes]                 [Channel]                  [Decodes]

• Usually used for advertisement to promote a person, place, product, service or program, etc.
• No opportunity for feedback or dialogue to clear up misunderstanding,
• It is less effective

Two-way communication

• The sender seeks the response of the receiver (Feedback)

Sender                        Message               Receiver
[Encodes]            [Channel]        [Decodes]

• There is mutual exchange of ideas and feelings
• Encouraged in most adult communications including training and education

Common barriers to Communication
• Noise - competition for attention
• Language
• Age difference
• Socio-economic gap
• Attitudes and beliefs
• Communication skills
• Attitudes (towards self, message and receiver)
  ✓ Positive attitude ➞ trust and empathy
  ✓ Negative attitude ➞ dissatisfaction
• Knowledge level
• The social system
• Culture
• Understanding of its target audience
• Audience characteristics
  ✓ The ‘non-listener’ type:
    - Who refuse to listen
  ✓ The know-it-all type:
    - Who thinks s/he knows everything
  ✓ The impatient type:
    - Who is reluctant to sit and jumps to conclusion
  ✓ The negative personality:
    - Who enjoys saying “No” to everyone
NEXT steps and closing

Time: 15 minutes

Activity

1. Ask participants how they plan to use the information gained from the workshop. Discuss resources and support available to them and plan follow-up. Explain again their involvement in the CIFSRF project for “Scaling up Pulse Innovations”.

3. Explain that there will be follow-up meetings with these same participants in 6 months. Ask participants to maintain a log of training given, households visited, etc over the next six months. At the follow-up meeting they will be asked to present their work.

4. Thank participants and close the Workshop
REFERENCES


Nicki Jackson Cochrane Health Promotion and Public Health Field. Victorian Health Promotion Foundation. TRAIN-- THE-- TRAINER HANDBOOK. May, 2005


PART I-MULTIPLE CHOOSE QUESTIONS

Instruction: - Choose and circle the most appropriate answer from the given alternatives

1. Which of the following is a **wrong** statement about the general concept of nutrition?
   a) Food is anything that is edible
   b) Nutrient is the active ingredient of food
   c) Malnutrition refers both about under and over nutrition
   d) Diet refers to the type of nutrient found in food

2. What is the minimum daily acceptable dietary diversity score for children 6-24 months old?
   a) Three
   b) Four
   c) Five
   d) Six

3. Which essential amino acid is lacking in grains such as wheat, rice and maize?
   a) Lysine
   b) Methionine
   c) Threonine
   d) Histidine

4. Which essential amino acid is lacking in pulses such as beans, peas and chickpeas
   a) Lysine
   b) Threonine
   c) Methionine
   d) Histidine

5. Which of the following statement is **incorrect** about nutritional benefits of pulses?
   a) Pulses/legumes provide a complete quality protein
   b) Pulses are good sources of healthy calories
   c) Pulses are good sources of micronutrients (e.g. iron & Zinc)
   d) Pulses are alternative sources of protein with much lower cost than animal source foods.
6. How many proportion of pulses should be mixed with cereals to prepare porridge for complementary feeding
   a) One portion pulses with one portion cereals
   b) One portion pulses with three portions cereals
   c) Three portions pulses with one portion cereals
   d) Half portion pulses with two portions of cereals

7. Which of the following is not household level pulse processing and preparation technique
   a) Soaking
   b) Germinating
   c) Canning
   d) Dehulling

8. Which of the following is the advantage of germination of pulses?
   a) Improving availability of anti-nutrients
   b) Improving nutritional quality
   c) Reducing availability of vitamins
   d) Reducing availability of minerals

9. Which of the following practice is not considered as safe food storage?
   a) Store foods in opened containers
   b) Store food for a short period of time
   c) Keep foods at safe temperature
   d) Storage of moist grains creates conditions leading to mould growth

10. Which of the following is not the characteristic of one-way communication?
    a) It ignores the interest of the receiver
    b) It is usually used for advertisement/promotion
    c) It is less effective than two-way communication
    d) It creates opportunity for feedback to clear up misunderstanding
PART TWO-TRUE/FALSE

Instruction: -Write “True” for the correct statement and “False” for the wrong one on the space provided

1. A healthy meal is one that includes variety of foods from different food groups.  
2. Pulses are nutritious, good for health and contribute to healthy environment.  
3. Pulse processing such as soaking and germination reduce the availability of vitamins.  
4. Pulses are inappropriate food for children, pregnant and lactating mother.  
5. Sanitation and personal hygiene are important for keeping food safe
Annex II: Session Evaluation Form

**Instruction:** Please circle the number that reflects your opinion about the session using the following rating scale:

5-Strongly agree  4-Agree  3-Uncertain  2-Disagree  1-Strongly disagree

<table>
<thead>
<tr>
<th>No</th>
<th>Evaluation area</th>
<th>Rating scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The trainer clearly stated instructional objectives</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>2</td>
<td>The trainer communicated effectively</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>3</td>
<td>The information presented was new for me</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>4</td>
<td>The trainer used a variety of training materials/approach</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>5</td>
<td>The trainer was enthusiastic about the subject</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>6</td>
<td>The session content was practical and not too theoretical</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>7</td>
<td>The session was well organized</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>8</td>
<td>The trainer asked questions and involved me in the session</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>9</td>
<td>The content of the session was relevant to my work</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>10</td>
<td>The session made me feel more competent in my work</td>
<td>5 4 3 2 1</td>
</tr>
</tbody>
</table>

Which aspect of the session were not clear?

__________________________________________________________

General Comment

______________________________

______________________________

______________________________

______________________________
Annex III: End of Training Evaluation Form

Please fill out this form at the end of the training. Your comments are valuable and will help improve future trainings.

**Instruction:** Please circle the number that reflects your opinion about the training using the following rating scale:

5-Strongly agree  4-Agree  3-Uncertain  2-Disagree  1-Strongly disagree

<table>
<thead>
<tr>
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<tr>
<td>1</td>
<td>The training has attained its objectives</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>2</td>
<td>The contents of the training were relevant to the objectives</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>3</td>
<td>The methods and techniques to conduct the training were adequate in relation to the objectives and content</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>4</td>
<td>The reference materials (example: handouts distributed) were adequate to the objectives and content</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>5</td>
<td>The trainers were effective in facilitating the training process</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>6</td>
<td>The relationship between the trainer and the participants and the organizer was satisfactory</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>7</td>
<td>The trainer worked adequately to cover the topics</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>8</td>
<td>The training venue was conducive to learning and skills practices</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>9</td>
<td>The duration of the workshop was adequate/appropriate</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>10</td>
<td>The workshop was successful when assessed overall</td>
<td>5 4 3 2 1</td>
</tr>
</tbody>
</table>

**General Comments**

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Thank you for your feedback!

Annex IV: Recommended Infant and Young Child Feeding /IYCF/ Practices
**Definitions of WHO-recommended core Infant and Young Child Feeding (IYCF) indicators**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early initiation of breast feeding</td>
<td>Proportion of children born in the last 24 months who were put to the breast within one hour of birth</td>
</tr>
<tr>
<td>Exclusive breast-feeding under 6 months</td>
<td>Proportion of infants 0–5 months of age who are fed exclusively with breast milk</td>
</tr>
<tr>
<td>Continued breast-feeding at 1 year</td>
<td>Proportion of children 12–15 months of age who are fed breast milk</td>
</tr>
<tr>
<td>Introduction of solid, semi-solid or soft foods</td>
<td>Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods</td>
</tr>
<tr>
<td>Minimum dietary diversity</td>
<td>Proportion of children 6–23 months of age who receive foods from 4 or more food groups</td>
</tr>
<tr>
<td>Minimum meal frequency</td>
<td>Proportion of breastfed and non-breastfed children 6–23 months of age, who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more</td>
</tr>
<tr>
<td>Minimum acceptable diet</td>
<td>Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk)</td>
</tr>
<tr>
<td>Consumption of iron-rich/ironfortified food for children 6-23 months</td>
<td>Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.</td>
</tr>
</tbody>
</table>
Annex VI: Nutrition Education Aids

1. Wash your hands before preparing or eating food
2. Roasting
3. Boil water and cover it properly
4. Ground pulse
**Annex VII: Dos and Don’ts of Training**

The following “dos and don’ts” should ALWAYS be kept in mind by the trainer during any learning session.

**DOS**

| Do maintain good eye contact. | Do K.I.S. (Keep It Simple). | DON’TS |
| Do prepare in advance. | Do give feedback. | Don’t talk to the flip chart. |
| Do involve participants. | Do position visuals so everyone can see them. | Don’t block the visual aids. |
| Do use visual aids. | Do avoid distracting mannerisms and distractions in the room. | Don’t stand in one spot—move around the room. |
| Do speak clearly. | Do be aware of the participants’ body language. | Don’t ignore the participants’ comments and feedback (verbal and non-verbal). |
| Do speak loud enough. | Do keep the group focused on the task. | Don’t read from the curriculum. |
| Do encourage questions. | Do provide clear instructions. | Don’t shout at the participants |
| Do recap at the end of each session. | Do check to see if your instructions are understood. | |
| Do bridge one topic to the next. | Do evaluate as you go. | |
| Do encourage participation. | Do be patient | |
| Do write clearly and boldly. | | |
| Do summarize. | | |
| Do use logical sequencing of topics. | | |
| Do use good time management. | | |