Table A4 cont.d.

Height	Percent of Reference			
	100%	90%	80%	70%
cm	kg	kg	kg	kg
110	18.5	16.7	14.8	13.0
111	18.8	16.9	15.0	13.2
112	19.2	17.3	15.4	13.4
113	19.5	17.6	15.6	13.7
114	19.8	17.8	15.8	13.9
115	20.2	18.2	16.2	14.1
116	20.5	18.5	16.4	14.4
117	20.9	18.8	16.7	14.6
118	21.3	19.2	17.0	14.9
119	21.7	19.5	17.4	15.2
120	22.0	19.8	17.6	15.4
121	22.4	20.2	17.9	15.7
122	22.9	20.6	18.3	16.0
123	23.3	21.0	18.6	16.3
124	23.8	21.4	19.0	16.7
125	24.2	21.8	19.4	16.9

Table A5

Reference weight-for-height. 95-145 cm, males and females

Height	Males			Females		
	Percent of Reference			Percent of Reference		
	100%	90%	80%	100%	90%	80%
cm	kg	kg	kg	kg	kg	kg
95	14.4	13.0	11.5	14.1	12.7	11.3
96	14.6	13.1	11.7	14.4	13.0	11.5
97	14.9	13.4	11.9	14.6	13.1	11.7
98	15.2	13.7	12.2	14.9	13.4	11.9
99	15.4	13.9	12.3	15.1	13.6	12.1
100	15.7	14.1	12.6	15.4	13.9	12.3
101	16.0	14.4	12.8	15.7	14.1	12.6
102	16.3	14.7	13.0	15.9	14.3	12.7
103	16.5	14.9	13.2	16.2	14.6	13.0
104	16.8	15.1	13.4	16.5	14.9	13.2
105	17.1	15.4	13.7	16.8	15.1	13.4
106	17.4	15.7	13.9	17.0	15.3	13.6
107	17.7	15.9	14.2	17.3	15.6	13.8
108	18.1	16.3	14.5	17.6	15.8	14.1
109	18.4	16.6	14.7	17.9	16.1	14.3
110	18.7	16.8	15.0	18.2	16.4	14.6
111	19.0	17.1	15.2	18.6	16.7	14.9
112	19.4	17.5	15.5	18.9	17.0	15.1
113	19.7	17.7	15.8	19.2	17.3	15.4
114	20.0	18.0	16.0	19.6	17.6	15.7
115	20.4	18.4	16.3	19.9	17.9	15.9
116	20.7	18.6	16.6	20.3	18.3	16.2
117	21.1	19.0	16.9	20.6	18.5	16.5
118	21.5	19.4	17.2	21.0	18.9	16.8
119	21.9	19.7	17.5	21.4	19.3	17.1
120	22.2	20.0	17.8	21.8	19.6	17.4
121	22.6	20.3	18.1	22.2	20.0	17.8
122	23.0	20.7	18.4	22.7	20.4	18.2
123	23.5	21.2	18.8	23.1	20.8	18.5
124	23.9	21.5	19.1	23.6	21.2	18.9
125	24.3	21.9	19.4	24.1	21.7	19.3
126	24.8	22.3	19.8	24.6	22.1	19.7
127	25.2	22.7	20.2	25.1	22.6	20.1
128	25.7	23.1	20.6	25.7	23.1	20.6
129	26.2	23.6	21.0	26.2	23.6	21.0

Table A5 cont.d.

Height	Males			Females		
	Percent of Reference			Percent of Reference		
	100%	90%	80%	100%	90%	80%
cm	kg	kg	kg	kg	kg	kg
130	26.7	24.0	21.4	26.8	24.1	21.4
131	27.3	24.6	21.8	27.4	24.7	21.9
132	27.8	25.0	22.2	28.0	25.2	22.4
133	28.4	25.6	22.7	28.7	25.8	23.0
134	29.0	26.1	23.2	29.4	26.5	23.5
135	29.6	26.6	23.7	30.1	27.1	24.1
136	30.2	27.2	24.2	30.8	27.7	24.6
137	30.9	27.8	24.7	31.5	28.4	25.2
138	31.5	28.4	25.2			
139	32.2	29.0	25.8			
140	33.0	29.7	26.4			
141	33.7	30.3	27.0			
142	34.5	31.1	27.6			
143	35.3	31.8	28.2			
144	36.1	32.5	28.9			
145	37.0	33.3	29.6			

Table A6

Reference arm circumference-for-age. 6-59 months and 5-10 years, sexes combined [1]

Age	Percent of Reference			
	100%	90%	80%	70%
months	cm	cm	cm	cm
6	14.7	13.2	11.8	10.3
7	15.0	13.5	12.0	10.5
8	15.2	13.7	12.2	10.6
9	15.4	13.9	12.3	10.8
10	15.6	14.0	12.5	10.9
11	15.7	14.1	12.6	11.0
12-23	16.0	14.4	12.8	11.2
24-35	16.4	14.8	13.1	11.5
36-47	16.6	14.9	13.3	11.6
48-59	16.8	15.1	13.4	11.8
years				
5	17.0	15.3	13.6	11.9
5½	17.1	15.4	13.7	12.0
6	17.3	15.6	13.8	12.1
7	17.8	6.0	14.2	12.5
8	18.4	16.6	14.7	12.9
9	19.1	17.2	15.3	13.4
10	19.8	17.8	15.8	13.9

A suggested 'cut-off' point for malnutrition among children aged 1-5 years is 13.5 cm or 12.5 cm. A realistic 'cut-off' point for school children is not known.

1/ Adapted from values for Polish children.

Appendix XIII

The growth chart

Plotting a child's weight on a growth chart, such as the WHO chart shown on the next page, is the best way of monitoring nutritional status. The chart should be explained to the mother and kept by her in a plastic bag. She is more likely to feed and care for her child well if she too understands the chart and so can watch the child's progress and discuss it with CFP staff.

The two reference growth curves on the chart provide a guide for the direction which the weight curve of a child should follow. A child whose weight curve is falling away from this general direction, or whose weight is below the lower curve, may be considered malnourished.

Growth charts can also be used in programme evaluation. For example, the percent of CFP children who are above the bottom line on the chart at the beginning of the programme compared to the percent above after x months of feeding, will give an indication of programme effectiveness.

To fill in the chart:

First visit:

1. Write in the name, birth weight and any other basic data.

2. Write the month and year of birth in the first box. Fill in the following boxes using the first 3 letters of each month. (Do not use numbers as these may be confused for age). Write the correct year beside each January and each birth month. Note that the birth month should always fall in a heavily outlined box. Once the boxes are completed the child's age can be read from the number on the relevant box at each subsequent visit.

3. Weigh the child (p 101). Find the corresponding weight on the side of the chart and follow the line along until it is above the month of weighing. Make a dot. Note the position in relation to the bottom reference line.

4. Record any reason for a low weight (e.g. diarrhoea) and explain the chart to the mother.

Subsequent visits:

5. Complete steps 3 and 4. Join the dots. This line is the child's weight curve. Check that it is following the general direction of the reference curves.

Growth chart for monitoring nutritional status

Name .....

Birth weight ..... 3·2 ..... kg

REASONS FOR SPECIAL CARE

..... Father away (migrant labourer)

..... 4th child in family .....

Mother
Child spacing
Father

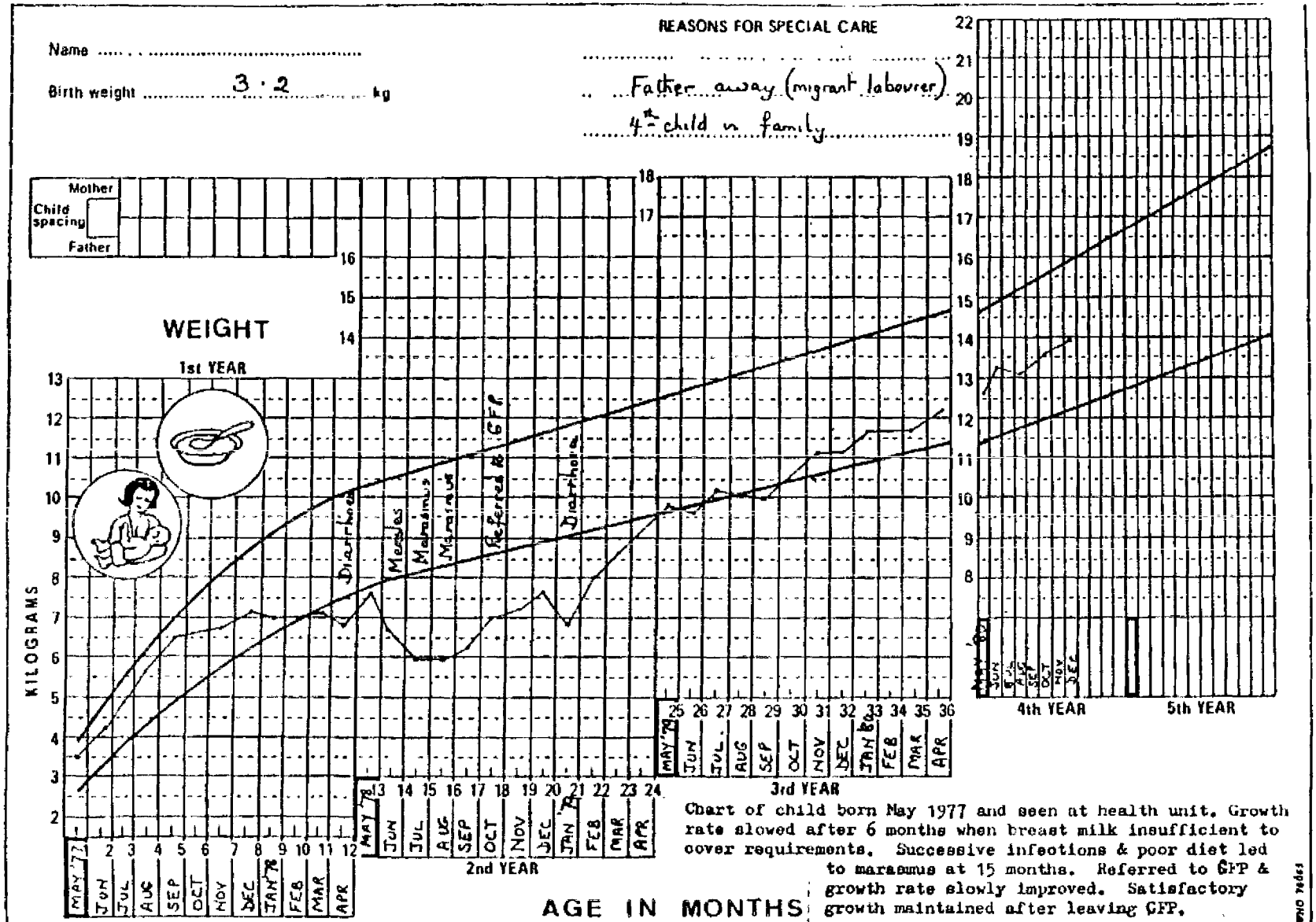

Chart of child born May 1977 and seen at health unit. Growth rate slowed after 6 months when breast milk insufficient to cover requirements. Successive infections & poor diet led to marasmus at 15 months. Referred to CFP & growth rate slowly improved. Satisfactory growth maintained after leaving CFP.

WHO 76561

Appendix XIV.

The effect of storage, preparation and cooking on the nutritive value of food

Reducing nutrient losses during food storage, preparation and cooking is one way of making CFP and home diets more economical.

The main effects of food handling on nutrient values are:

- under normal conditions of storage, preparation and cooking most nutrients are fairly stable except for vitamin C, and to some extent, thiamine;
- severe heating may damage some amino acids and thus reduce protein quality;
- repeated heating of fat for frying at high temperatures may produce unpleasant tastes and destroy any vitamin A present;
- vitamin A is lost when fruits and vegetables are dried in the air;
- thiamine is partly destroyed by cooking and when foods are dried in the air;
- riboflavin is usually stable but is rapidly destroyed when liquid milk is exposed to sunlight;
- during boiling some water soluble vitamins, particularly vitamin C, and some minerals will pass into the cooking water;
- alkalis, heating, drying, canning and pickling destroy vitamin C;
- vitamin C is also lost when fresh fruit (other than citrus) and vegetables are stored;
- if not destroyed in processing, vitamin C is stable in bottled, canned and frozen foods and in fresh fruit juice kept in closed containers.

Up to 20-30% of some nutrients in foods may be lost by poor food handling. The procedures in the following checklist should reduce losses to 5-10%.

Checklist 5

Food handling procedures that reduce nutrient losses

Fresh fruit, vegetables, meat and fish are purchased daily

No food, except dry rations, are stored more than a few days even in a refrigerator

Liquid milk is kept covered and away from light

Vegetables are well washed, but not soaked, just before cooking

Unnecessary slicing and peeling are avoided

Leafy vegetables are placed in boiling liquid or gruel and cooked for the minimum time

Soda is not used for cooking leafy vegetables

Rice is washed only once or twice without rubbing

Rice and vegetable water, and meat and fish juices, are used for stews, soups or as a drink

Foods are cooked through but are not overcooked

Meals are eaten as soon as possible after preparation

Reheating of foods is avoided

Appendix X V.

Food quality control and hygiene

1. Food quality control

A food quality control system may be set up with the help of a local or regional health inspector or a specialized institution. It should include:

- a person responsible for checking the quality of each consignment of food before and after delivery;
- specifications as to where and when foods will be inspected;
- specifications as to which indicators of quality will be used (Table 1);
- monitoring of the system and training of staff in quality control by central supervisors.

Table

Indicators of poor quality food

Fresh food	Food in cloth, sacking, plastic or paper packages	Canned food
Bad smell	Torn or unsealed packages	Swollen cans
Unusual taste	Spillage	Rusty or damaged cans
Bruising	Rodent or insect damage	Holes in cans
Mould	Mould	Out-dated cans
Over-ripeness	Sweating or dampness	Contents not as labelled
Rodent or insect damage	Dirt in food or on packaging	
Limpness or shrivelling	Food mixed with other substances	
	Shrivelling of dried pulses	

2. Hygiene

There are six areas in a SFP where hygiene control is important. These are:

1. Personal hygiene and health of staff and participants

   Parasites and germs causing diarrhoea and other diseases may get onto the hands after using the toilet or after handling foods or utensils contaminated by human or animal waste. This can be prevented by the proper use of a clean toilet, by washing hands with soap and water and by cleaning the finger nails. Germs also thrive on dirty clothing.

Persons with respiratory or skin infections should not be allowed to prepare food for on-the-spot feeding. If possible the stools of food handlers should be checked to make sure they are not 'carriers' of disease.

2. Food

The germs causing diarrhoea, dysentry, tuberculosis, throat infections, parasitic diseases and, occasionally, fatal food poisoning can be carried by food. They multiply very rapidly in milk, meat, fish and cooked dishes especially if these are kept at room temperature. Such foods should be bought fresh each day, kept covered and refrigerated if possible and never reheated or kept at room temperature overnight.

Dried milks and dried egg should be used immediately after reconstitution with safe drinking water. Dried egg should be used within 24 hours once the can is opened. It is safer to mix dried milk with food than to reconstitute the liquid when feeding small children.

Meat, especially pork, may transmit worms and so should be thoroughly cooked. Very dangerous germs grow in badly canned foods and spoilt, damaged or swollen cans must be thrown away.

Some germs and eggs of worms may be carried on the surface of foods. Fruits and vegetables should be well washed and, unless peeled, should be cooked if possible.

3. Water supplies

Water contaminated by human or animal waste can carry cholera, diarrhoeal and parasitic diseases, hepatitis and typhoid. These could be fatal to participants especially children. Therefore only water from safe protected sources should be used, and kept, when necessary, in clean covered containers. In some areas mothers should be encouraged to boil drinking water.

4. Equipment and utensils

If these are not kept clean, germs will thrive on bits of old food and dirt and then contaminate new foods.

5. Waste disposal

Waste food is a good breeding ground for germs and, unless covered, attracts rats, flies and other pests. Broken cans and bottles are dangerous if there are small children around and can also act as breeding places for mosquitos.

6. Buildings

Broken down buildings allow vermin, water and dust to enter. Rough walls are difficult to clean and will harbour the eggs of lice and other insects. Dirty conditions also lower the morale of workers and encourage them to relax their standards of personal hygiene.

To monitor hygiene checklist 6 can be adapted to local conditions.

An indicator of hygiene quality is: $\frac{\text{Number checked items that are satisfactory} \times 100}{\text{Total number items checked}}$

This indicator can be used to evaluate programme quality (p 57).

Appendix XVI

Checklist for

Monitoring hygiene in SFPs

Area 1. Personnel

- All staff and participants wash hands with soap and water
  - after using the toilet
  - before handling food
- Staff hands, nails, skin, hair and uniforms are inspected daily
- Any open wounds or sores are covered
- No one with a respiratory or skin infection handles food
- The stools of food handlers are checked regularly for parasites and germs
- Staff have regular medical check-ups
- Serious disease among staff or participants is reported to the health authorities
- Food handlers do not cough or sneeze over food
- There is a hygiene education programme for staff and participants

Area 2. Food

- Fresh meat, fish, fruit and vegetables are purchased daily
- None of the foods used show signs of poor quality (table 1, p 117)
- Cans that are damaged or swollen are thrown away
- Foods damaged by rats, mice or insects are thrown away
- Raw and cooked foods are covered to protect them from insects and dust
- Fruits eaten raw are washed well and peeled if possible
- All fruits and vegetables are washed before preparation
- Fresh and reconstituted milk and dried egg is used within a few hours
- Dried egg is used within one day of opening the can
- Fish, poultry, meat (especially pork) and eggs are well (but not over) cooked
- 'Left-over' foods are not kept for more than a few hours and never overnight

Area 3. Water

- There is sufficient water for washing and cooking
- The water comes from a source protected from animals and human waste
- Water storage containers are clean, covered and raised off the ground
- Water containers are cleaned regularly and properly
- Rusty containers are discarded or repainted
- There is regular biological and chemical analysis of water supplies
- The local supervisor receives results of these tests and notifies the health authorities if there is any contamination
- The animals used to carry water are healthy

Area 4. Equipment and utensils

- A particular person is responsible for each cleaning job
- All staff know how to clean equipment and utensils to a specified standard
- A cleaning timetable is displayed
- All equipment and utensils are clean when inspected each day
- Stock cards of cleaning materials are kept so more can be ordered when necessary
- There is an adequate supply of cleaning materials (towels, mops, soaps, brushes)
- Food containers or utensils of participants are inspected before food is given out
- Dirty food containers are cleaned before being filled
- Animals do not come into the kitchen or eating area
- The floors and furniture are cleaned after each meal

Area 5. Waste disposal

- Garbage is kept in covered, watertight, rustproof containers
- Garbage containers and the surrounding area are cleaned daily
- Garbage is removed regularly
- Amounts of kitchen and plate waste are checked periodically
- When garbage is being burnt it is protected from children and is downwind of the GFP site
- Waste water is carried by drains (preferably covered) away from water supplies
- Toilets are sited away from cooking, feeding and food distribution areas
- Toilets are of adequate number and of a design approved by the health authorities
- Toilets are maintained in working order and repaired immediately they break down
- Toilets are cleaned daily
- Staff and participants know how to use the toilet properly
- Facilities for hand washing are sited near the toilet

Area 6. Building

- An estimate for building maintenance and repair is included in the budget
- A local workman is responsible for building maintenance and repair
- There is a schedule for cleaning and whitewashing buildings
- All rough walls have been plastered
- Buildings are inspected frequently for holes, signs of damage, decay and vermin and repaired immediately if necessary

Appendix XVII

Guidelines for using local utensils to measure SFP foods

Instead of weighing food when distributing rations, or preparing a recipe, it is often more practical to use a local measuring container such as a cup or a can. This explains how to convert the weights of foods into local measures. This should be done at the central supervisory level using accurate scales.

1. Choose a widely used and standard sized local measuring container. This may be a can, a glass, a cup or a box. Spoons, match-boxes or handfuls may be useful too. Measures of different sizes are sometimes needed.

2. Fill the measure to the brim with the food concerned, tip the food onto the scales and weigh accurately. Repeat twice and take the average weight.

3. Use the following formula to convert the weight of the food given in the ration scale (or in a recipe) into local measures:

$$\frac{\text{Weight of food in ration scale}}{\text{Weight of food in one measure (from 2)}} = \text{number of measures required}$$

4. Repeat for each food used in the SFP.

5. Convert the ration scales and recipes to local measures before giving them to the SFP project staff.

Example:

1. Chosen measure is an empty can (from a widely used brand of condensed milk).

2. The average weight of one measure of SFP food is:

Water/liquid milk	300 g	Groundnuts, dried	180 g
Wheat flour	200 g	Beans, dried	225 g
Rolled oats	135 g	Sugar	240 g

3. Ration scale includes 500 g wheat flour. This is equivalent to:

$$\frac{500\ g}{200\ g} = 2.5 \text{ measures}$$

The following data may be useful when converting weights to measures:

Conversion factors

30 gram (g)	=	1 ounce (oz)
454 g	=	1 pound (lb)
560 g	=	1 Imperial pint
480 g	=	1 U.S. pint
1 litre (l)	=	1 000 millilitres (ml) = 1.8 Imperial pints
1 kilogram (kg)	=	2.2 lb

Volume capacity of some common measures (to the brim)

'Standard' measuring cup, cigarette tin or 50 g size 'Instant' coffee jar	=	240 ml
Condensed milk can, half '5" diameter' coconut shell	=	300 ml
Teacup	=	200 ml
'Standard' tablespoon (Tbsp)	=	15 ml
'Standard' teaspoon (tsp)	=	5 ml

Weights of some selected measures of foods

1 egg	=	50 g
1 rounded Tbsp dried egg	=	10 g
1 rounded Tbsp sugar	=	15 g
1 rounded Tbsp dried skim milk	=	10 g
1 rounded Tbsp dried whole milk	=	8 g
1 Tbsp oil	=	15 g

Appendix XVIII

Educational methods and teaching aids

1. Educational methods for training

On-the-job training is an organized approach to acquiring needed knowledge and skills, using the actual equipment and materials the job requires. Properly planned on-the-job training breaks work into logical parts which can be learned in sequence. It is used for teaching relatively simple operations to new workers. It is also used when job methods are changed. It can be carried out by placing a new worker next to an experienced one.

Learning through doing is based on the principle of 'tell, show, do'. The job is broken down into convenient stages and each stage is explained (tell) and demonstrated (show). The trainees then carry out exercices on that stage (do), which must be completed satisfactorily before the next stage is begun.

Working groups should be introduced with a specific purpose in mind. They are used to discuss in detail the problems which trainees meet in their daily work. Problems are listed and then displayed and discussed, the emphasis being on solving real problems rather than simulated ones. Working group discussions should be as frank and lively as possible, concentrating on covering the whole range of answers which can be found for any single problem.

Projects are usually tasks or problems of some complexity or depth, which are undertaken by an individual or small group over a period of time. Many present-day courses are organized as two or more periods in the training centre with intervening periods spent working on projects. In this way trainees can practise what they have already learnt.

Role playing involves acting out situations. It places the trainees in simulated circumstances where they act as they would in reality. Role plays should never be rehearsed or viewed as demonstrations of good or bad behaviour. Learning occurs mainly during the analysis and discussion that takes place afterwards. Because important insights are obtained from actually playing the roles, as many trainees as possible should take part.

Lectures are the commonly used method of passing on factual information to large numbers of people. It is essentially a one-way communication method, it cannot discriminate among the participants' needs, motivate the trainees or give them a chance to practise what they are taught. See item 12 p 66.

Discussions can be effectively used when the aim is to pool knowledge and experience or change attitudes. It is best used with a group of 8-10 members, whose active participation and exchange of ideas can prove mentally stimulating. If the trainer plays a neutral role, guiding the group with relevant questions and information, the group will arrive at its own conclusions rather than being supplied with them 'off-the-peg'.

Panel discussions involve a panel of experts drawn from trainers, visiting experts and community leaders. The trainees ask questions directly or submit them in writing. The panel may give more balanced answers if they see some of the questions beforehand.

Case studies. The aim of this method is to give the trainee practice in dealing with day-to-day situations away from the pressures of work, under the guidance of an instructor, and in collaboration with fellow trainees. The case may be presented as a narrated or acted out situation, as a file of papers or as a film. The situation, embodying specific work problems, is given to trainees for their analysis and for them to propose solutions. Afterwards their ideas are critically

2. Methods for nutrition education

Some of the methods given above are suitable for teaching mothers, school children or the general public, i.e. learning through doing, projects, role-playing, discussion groups. Other methods which are useful are:

Food demonstrations. The demonstrator must be confident, well organized and friendly. The demonstration should be given in a cool, convenient place. It should be planned so that all the foods and utensils are at hand, time-consuming food preparation is done beforehand, and participants can see all the procedures. Only locally available food, utensils and equipment should be used. The demonstration should not take longer than 15-30 minutes, each procedure, and the reason for it should be described, and some of the audience be invited to help. Questions should be encouraged and the final product tasted by all participants. The demonstration can be evaluated by finding out if the recipe is being used at home, and if not, why not.

Illustrated talks to mothers or community groups. Discuss only one main idea or 'message'. Do not talk for more than 10-15 minutes and then allow plenty time for questions and discussion, encouraging those who are shy to speak. If the audience breaks up into small groups everyone gets a chance to express his opinion. From the discussions, a group decision regarding a behaviour change may emerge.

Quizzes and games. Supervisors should try to adapt local games so they can be used to teach or to test nutritional knowledge. A group of mothers or children enjoy a nutrition quiz. Divide the group into 2 teams and ask each in turn a question, starting with an easy one. Repeat correct answers, giving an explanation if necessary, and keep the score. Applaud correct answers. Teams may also be asked to illustrate the best menu or compose a nutrition song.

Plays, puppet-shows. CFP participants often enjoy acting and children like making simple puppets. Give the group an event to For example, 'show what happened when a month old baby stopped breast feeding', 'show what you have to do to prepare a good meal for your child'. Discuss the important points afterwards and correct any wrong procedures.

3. Teaching aids

Teaching aids, particularly visual aids such as charts, photographs or cartoons, significantly increase, clarify and reinforce learning. Teaching aids must be carefully chosen or designed so that they are suited to the audience and the situation. They should be pre-tested to make sure the correct 'message' is being projected.

The following factors should be considered when selecting teaching aids:

- the size of the audience and its characteristics (age, occupation, cultural and educational background);
- the facilities and resources at the teaching site and the method of transportation to it. It is difficult to carry much on a bicycle;
- the funds available;
- the number of times the aid will be used. Expenditure is justified more easily if the aid will be used several times;
- the type of aid which is familiar to the teacher;
- any particular effect required in the presentation (e.g. humour, realism). This will determine the style of the aid (e.g. cartoon, photograph);
- whether a gradually built-up display requiring movement is needed (e.g. demonstrating how to build a latrine or prepare a meal). Real objects, models, flannelgraphs or a magnetic board, suitable.

Designing visual aids. Since 'seeing' is often more effective than 'hearing' and since visual aids can be inexpensive to make and easy to transport, a CFP supervisor may want to acquire or produce visual aids for both training staff and educating participants. Visual aids can be used to:

- show an outline of the teaching session and its main or subordinate points;
- emphasize important concepts or information;
- demonstrate a sequence of events (e.g. transmission of germs by poor food handling);
- illustrate unfamiliar objects, foods or concepts although the real object is always better;
- show relationships between objects or facts.

When designing a visual aid you should:

- select the most important points of the teaching to illustrate with visuals;
- design a separate visual for each of these points;
- choose a type of visual that is easy to make and to use will be understood by the audience;
- take time planning the lay-out and colours. Remember the visual should appeal to your audience rather than yourself;
- keep the visual simple and uncluttered. Place the main picture in the centre and have the background rather empty to avoid distraction. Use the minimum of words. Only use symbols if you are sure your audience understands them;
- use photographs to make the visual realistic;

- pre-test to make sure the correct 'message' is projected and to obtain audience reaction to style, colour, size, etc.

- evaluate impact of visual in the total presentation. Modify or discard if necessary

Examples of teaching aids

Real objects - usually very effective.

Models - effective but may be difficult to make.

Photographs, posters, charts, flipcharts, cartoons - practical and cheap for many situations. Unless well designed may not project the correct 'message'.

Chalkboard - since it is often available, skills in writing and drawing clearly and in a logical order should be developed. Complicated drawings are best completed before the session. Increase interest by using coloured chalk and asking audience to help.

Flannelboard, magnetic board - allow a concept to be built up. Audience can easily participate.

Flash cards, small cards with instructions, etc. - useful for small groups and on-the-job training.

Books, pamphlets, comics - for some audiences (e.g. QFP staff) well designed reading material is a good way to reinforce learning. Hopefully translated versions of this manual can be used in this way.

Slides, filmstrips - effective if designed for local audience but expensive.

Songs, local games - can be very effective in expressing concepts in the local idiom and reinforcing learning. Imagination and audience participation are required.

Appendix XIX

Basic recipes for some WFP foods

1. Bulgur wheat and soy fortified bulgur wheat

- cooks like rice
- do not rinse after cooking
- do not lift lid or stir during cooking

Basic recipe/porridge

1 volume flour 2 volumes water Salt to taste	Mix flour and salt with cold water and bring to boil. Remove from heat, cover and stand for 15 minutes. Add sugar, oil, crushed groundnuts or other foods as desired.

2. Rolled oats and soy fortified rolled oats (SFRO)

Basic receipe/porridge

1 volume SFRO 2 volumes boiling water Salt to taste	Add oats or SFRO and salt to boiling water. Stir and cook for a few minutes. Add sugar or flavouring if desired.

3. Soy fortified wheat flour

- can be used to replace regular flour in any bakery product
- additional water and less mixing are needed.

4. Soy fortified cornmeal (SFCM)

Basic recipe

1 volume SFCM 1 volume cold water 3 volumes boiling water Salt to taste	Mix SFCM, cold water and salt. Slowly stir into boiling water. Cook and stir until thick. Lower heat. Cover and simmer for 15 minutes stirring occasionally to prevent sticking. Add other foods as desired.

5. Soy fortified sorghum grits (SFSG)

- can be used instead of rice
- cooks like rice using slightly more water
- to shorten cooking time soak for several hours
- can be added to soups, stews, etc.

Basic recipe

1 cup SFSG 2 Tbsp oil 3 cups water Salt to taste	Add SFSG, oil and salt to cold or boiling water. Bring to boil, cover tightly and simmer 15 minutes. Remove from heat and stand for 15 minutes.

6. Wheat soy blend (WSB) or corn soy blend (CSB)

Beverage	Porridge	
1 volume WSB/CSB	1 volume WSB/CSB	Add WSB/CSB to cold water. Heat and stir
10 volumes water	4-8 volumes water	continuously until mixture boils. Cook 2-5
Salt or flavouring as desired		minutes longer over low heat. Add sugar or flavouring as desired. Cool.

Bakery products - 10-15% of wheat flour may be replaced by WSB/CSB.
To 'extend' meat add 1 volume WSB/CSB to 4 volumes ground meat.

7. Risoa

- cooks more like pasta than rice
- add to boiling soups, stews, etc.

Basic recipe

1 volume risoa	Add risoa to boiling water with salt,
Plenty boiling water	stirring occasionally and cook for 5-8 minutes.
Salt or flavouring to taste	Drain.

Cooked risoa can be flavoured with sugar and used as porridge, formed into patties and deep fried or steamed with onions and oil.

8. Corn soy milk (CSM)

- store in a cool, dry place. Always keep the bag tightly closed.
- always mix with cold water
- stir while cooking and cook until smooth
- CSM mixed with cold water can be added to soups, stews, etc.

Beverage	Porridge	
1 volume CSM	1 volume CSM	Mix CSM with cold water and stir until
2 volumes cold water	1 volume cold water	smooth. Stir into hot water and boil,
6 volumes hot water	2-3 volumes hot water	stirring frequently, for 5-10 minutes.
Salt or sugar as desired		Add sugar or salt to taste.

9. Instant corn soy milk (ICSM)

- mix with SAFE drinking water
- add ICSM slowly to cold water, stirring continuously
- no cooking is required
- ICSM is a bland food and usually requires flavouring

Beverage	Porridge	
1 volume ICSM	1 volume ICSM	Add ICSM to water, stirring vigorously
3 volumes water	1-2 volumes water	until all lumps disappear. Add sugar
Sugar or flavouring as desired		or flavouring to taste.

Dough

2 volumes ICSM
1 volume water

10. Dried egg

- use within 1 day of opening the can as germs multiply quickly in the egg
- once reconstituted with water use immediately
- 2 Tbsp (level) or 12 g dried egg + 2 Tbsp or 36 g water is equal to 1 fresh egg

Basic recipe

2 volumes dried egg 2 volumes water	Stir water into the egg. Leave 15 minutes and then use in the same way as fresh egg.

11. Fish protein concentrate - type B (FPCB)

- FPCB has a strong taste
- allow about 15 g or 1 spoonful per person
- do not use more often than 3 times a week
- FPCB can be added to sauces, stews and soups just before cooking is finished

12. Dried milks (DSM or DWM)

Basic recipes

1 Tbsp DSM or DWM 1 cup gruel or 1 mashed banana Sugar to taste	Mix milk with little gruel or banana until smooth. Add rest of gruel or banana and sugar as desired.
125 g or 250 ml DSM 1 litre SAFE drinking water Sugar as desired	Mix dried milk with little water to make smooth thin paste. Add rest of the water. Do not sieve as some milk will be lost.

For therapeutic feeding:

80 g DSM 40 g sugar 50 g oil Boiled cooled water	Mix the DSM and sugar and then stir in the oil. Stirring well add water to make 1 litre of formula. (Each litre contains about 900 kcal and 30 g protein).

Appendix XX.

Simple field test for vitamin A in dried skim milk

A simple field test has been developed to check the presence of vitamin A in dried skim milk (DSM). About 35 ml of trichloroacetic reagent are prepared by dissolving 50 g of crystalline reagent grade trichloroacetic acid in 5 ml of distilled water, preferably heated to about 60°C.[a] The resulting reagent is highly corrosive and irritating; it should never be pipetted by mouth and any drop that comes accidentally into contact with the skin, mouth, or eyes should be rinsed immediately and copiously with water The reagent is light-sensitive and should be stored in the dark, preferably in a brown bottle, itself kept in some opaque container, box, or cupboard. The use of a freshly prepared solution appears advantageous This seldom involves any difficulty as crystalline trichloroacetic acid is one of the most commonly used reagents in clinical and biochemical laboratories.

The test is carried out in two steps and requires one saucer and two glass or china cups. (1) Place a teaspoonful of DSM in the saucer and add a few drops of reagent; if the wet powder turns blue, vitamin A is present, but if there is no colour change, the test could be negative or false and should be checked. (2) To check, place 15 g of DSM in each cup, add 15 ml of water to the first, and stir, preferably with a glass or plastic rod or spoon, until a white slurry is produced. Then add 15 ml of reagent to the second cup and stir in the same way. If vitamin A is present, the colour will become pale blue or green in about one minute, quite distinct from the white slurry in the first cup. If vitamin A is absent, the slurries in both cups will look alike. To clean the utensils, they should be rinsed promptly,[b] thoroughly, and repeatedly with water. To render the reagent harmless before disposal, it should be diluted a hundredfold or more.

This qualitative test is designed for use under field conditions; it is not meant as a substitute for quantitative determinations

[a] The laboratory that prepares the reagent may wish to supply convenient measuring spoons to handle 15 g of DSM and 15 ml of liquid; tolerances of ± 10% are of no consequence for the test, but account should be taken of the 30 - 40% density variations existing between batches of DSM

[b] Delayed cleaning-up may be laborious.

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