

MODULE 4: NON-EMERGENCY HUMANITARIAN ASSISTANCE

I. INTRODUCTION

The overarching goal of USAID's PL480, Title II development program is to achieve sustainable food security in chronically food deficit countries. The Office of Food for Peace's (FFP) Strategic Objective (SO) #2 supports this goal and is stated as "Increased effectiveness of FFP's partners in carrying out Title II development activities with measurable results related to food security with a primary focus on household nutrition and agricultural productivity."

FFP Title II food resources may also be used for "safety nets" for vulnerable groups who are not able to take full advantage of food security activities available in their communities. Non-Emergency Humanitarian Assistance (NEHA) can improve the nutrition and food security of these vulnerable populations. For example, NEHA can provide critical food aid to orphans, the elderly, hospital patients, and families stricken with HIV/AIDS.

II. GUIDELINES FOR COMMODITY SELECTION FOR NEHA PROGRAMMING

The following provides general guidelines for selecting the most appropriate, cost-effective Title II commodity rations to accomplish program objectives. The guidelines are organized into five steps. This module summarizes the five steps and includes key points of consideration for NEHA programming under each step. This guidance is intended to be flexible enough to allow the selection of the most appropriate food aid ration for each specific situation. Box 1 below lists the five steps for commodity selection:

Box 1: Five Steps for Selecting Commodity Rations:

- Step 1. Program Design
- Step 2. Suitability of Food Commodities
- Step 3. Ration Specifications
- Step 4. Ration Calculations
- Step 5. Ration Ranking and Selection

STEP 1: PROGRAM DESIGN

The five key program design components are: (1) carrying out a needs assessment; (2) determining the appropriate use of food aid; (3) identifying characteristics of the target population; (4) developing program activity objectives; and (5) determining the distribution mode and frequency. An explanation of each design component follows:

1. Carrying Out a Needs Assessment

A needs assessment should be carried out in a timely and participatory manner to determine the nature, extent and severity of the food need, to describe food accessibility and availability and to identify factors that may impede effective utilization of food aid. The findings from this assessment should help define the criteria for selecting the beneficiaries, institutions and/or geographic areas to be targeted. The assessment should also explore the possibility of using locally produced foods to supplement the food aid package. When appropriate to the program objectives, the degree of malnutrition in the target population should also be determined. Finally, the assessment report should briefly describe the assessment methodology used.

Primary Data Collection: Primary data may be collected using survey methods that gather information about such things as food consumption, nutritional status, food availability and networks of community support. Qualitative data gathering techniques are also helpful, including in-depth interviews, focus group discussions, participatory rural appraisal, and observation. Methods for collecting primary data are described in USAID/CDIE's *Performance Monitoring and Evaluation Tips*, which is available online at www.dec.org/usaid_eval. Other instructional resources can be found in the Resource List at the end of this module.

Secondary Data Collection:

Secondary data may already be available from various sources including reports from government agencies, USAID, UN agencies (especially, UNICEF, UNAIDS), international or local PVOs and other donors. These data should be verified with local key informants. More guidance on how to conduct needs assessments may be found on line at www.usaid.gov/hum_response/ffp/dappaa.htm.

2. Determining the Appropriate Use for Food Aid

NEHA food aid will typically have a safety net or nutritional objective, such as the maintenance of nutritional status, rehabilitation of malnourished individuals or the prevention of malnutrition. It might also be used as an incentive to motivate members of the target group to participate in health or education services. Naturally, different program activities will involve different targeting, rations, and graduation criteria.

3. Identifying Characteristics of the Target Population

The general purpose of NEHA programs is to provide a safety net for those who cannot adequately provide for themselves because of a long term or permanent disability of some kind. Many are housed in institutions, but others live in households disseminated through the community. Some groups that might be served by NEHA programs are:

- ◆ **Persons residing indefinitely in institutions**, such as orphans, the terminally ill, those who are severely disabled mentally or physically, or elderly pensioners who must be institutionalized. Food aid may provide a substantial portion of these individuals' nutritional needs.
- ◆ **Persons temporarily housed in institutions**, including children and adults who are hospitalized or participate in residential rehabilitative services or skills training. The ration package can alleviate the burden on the individuals' households' time and income.

- ◆ **Persons temporarily in need of assistance while living in the community**, including marginalized individuals or households that are unable to adequately care for themselves, for instance, because of mental or physical disability, illness, age, destitution, or low social status, and who are not under the care of an institution. Included in this category are chronically ill out-patients (e.g. TB cases, lepers), and street children, including orphans, those abandoned by their families and those inadvertently separated from their families (e.g., by disaster). It can also include children living with members of their extended family, e.g., those from HIV/AIDS affected households. Many of these recipients receive food aid as nutritional support for a relatively short period of time while they achieve or regain self-sufficiency. For others it serves as an incentive to participate or attend another program (e.g., health education).
- ◆ **Severely affected communities:** In some cases, where the targeted group represents a large part of the population, an entire community might be targeted (e.g., HIV-affected communities)

4. Developing NEHA Program Activity Objectives

The primary objective of the NEHA program is to maintain or improve the nutritional status of the target population and to create a foundation for more sustainable food security programs funded from non-NEHA resources. Although each cooperating sponsor (CS) will approach the achievement of its activity objectives in different ways, it is urged that CSs review USAID's Managing for Results Terminology (see Annex I of Part Three). The latter review will help CSs develop standardized performance reporting on progress made toward achieving established objectives. Activity objectives should be result statements, that is, they should clearly describe the desired end result of the intervention. For example, results-oriented objective would be "*The nutritional status of the target group maintained*".

USAID recommends having at least one performance indicator to track progress toward each objective/result. Performance indicators are variables that measure a particular dimension that can show progress toward the stated result. For example, an indicator for the result statement mentioned above (Maintenance of nutritional status of the target group) could be "average weight-for-age z-score within the target group". Resources for sample food security and nutrition indicators can be found in Annex II. USAID/CDIE's publication, *Performance Monitoring and Evaluation Tips* (www.dec.org/usaaid.eval), which provides guidance on how to develop result statements and performance indicators. When possible, impact and output indicators should also be developed and monitored. The benefits of having both types of indicators are self-evident. For example, it is not only important to know the percent of the target population reached with food aid (output), but to also determine whether nutritional status of the target population improved as a result of the food aid (impact).

CSs should also provide baseline data for the selected indicators or spell out a plan to collect it. Ideally, baseline studies should be part of the needs assessment. If this is not possible then the indicators can be submitted to FFP for review after the program proposal is approved. Naturally, each CS's resources to monitor and evaluate programs are different. This will be taken into consideration during USAID's food aid proposal review and approval process. Also refer to the Food Aid Management's website for guidance and useful links www.foodaid.org.

5. Determining the Distribution Mode and Frequency

NEHA programs typically provide on-site (wet) feeding in institutions or at community feeding centers or take-home rations for individuals or households in the community. If monetization or FFW are considered as alternative program components, refer to the relevant guidance in other parts of the CRG.

Direct Feeding

- ◆ **On-site (wet) feeding** involves preparing and serving meals or snacks at a designated site outside the home. In NEHA programs on-site feeding is commonly provided at institutions where beneficiaries reside or at designated community feeding centers. Most NEHA on-site feeding will involve provision of one or more meals daily, 365 days per year. Exceptionally, feeding may be limited to 5-6 days per week or only to certain season, because there is food available from other sources for the rest of the time. The advantage of on-site feeding is that food rations are eaten under supervision, which helps to ensure that the food supplement is actually consumed by the target population.
- ◆ **Take-home rations** are dry, uncooked food rations carried home where it is prepared and consumed by the food aid recipient. Take-home packages can provide recipients' entire calories and protein requirements, or only a part of their requirements, if foods from other sources provide the rest. The advantage of take-home rations is that they are easier to administer, less costly than on-site feeding, demand less time from recipients, and can reach larger numbers of beneficiaries. However, dry rations may be shared with other family members (leakage) or sold/exchanged in the market place, thereby reducing their nutritional impact on the intended beneficiary.

STEP 2: SUITABILITY OF FOOD COMMODITIES

Suitability relates to the characteristics of the commodities that affect the utilization of the food aid commodities. Suitability of food rations should take into account nutritional needs, cultural and physiological appropriateness, locally available foods, food processing and storage capacities, and local market prices and food consumption preferences.

Cultural suitability: It is important to consider food preferences and consumption patterns, taste and traditional taboos when designing ration package. Clearly, a food commodity that is not eaten does not directly provide nutritional benefit to the beneficiary. Another important consideration is whether the commodities are culturally suitable for the particular role they are to play in the project. It is key to identify major constraints to using particular commodities.

Nutritional content: This refers to the energy, protein, fat, and micronutrient content of the ration package. For example, populations deficient in vitamin A would benefit from receiving vitamin A fortified vegetable oil and blended commodities. The age, sex, and activity level (e.g., distance to walk to school) of the target group are primary determinants of their nutritional needs. The ambient temperature must also be considered in cold climates.

Physiological appropriateness: The physical characteristics, such as, the bulk, viscosity, digestibility and tolerance, of the food commodity need to be considered as ration packages are being developed.

For example, children less than 24 months of age have a smaller stomach size and are, therefore, less able to consume enough high bulk foods to meet their caloric needs. Young children, the sick and the elderly are less able to chew and digest some foods. Please refer to *Module 1 – MCHN Program* for details on physiological appropriateness for mothers and children. [HYPERLINK](#) People suffering with HIV/AIDS also have special food requirements.

Availability of processing and/or storage facilities: Factors that affect food processing and preparation must be considered, such as access to mills, access to fuel for cooking and preparation and cooking time.

Characteristics of locally available food: Determine the timing of harvests and seasonal shortages of staple foods and examine the affordability of local foods for the target group, as locally produced or purchased food may complement the imported Title II food commodities and eventually might replace them.

Cost: In part, cost will guide the suitability of ration commodities. Step 5 below provides guidance on how to calculate the cost-effectiveness of a ration package.

STEP 3: RATION SPECIFICATIONS

Ration specifications should be based on specific program objectives and nutritional needs of the target population or the income transfer value of the commodities it contains. However, other factors may influence ration size, such as standards used by other implementing agencies or past program ration specifications. Program objectives and characteristics of the target group(s) should drive the decisions about ration specifications. Below is guidance for developing ration specifications for nutritional as well as income transfer consideration:

1. Determining Nutritional Values for On-site Feeding

Specifications for rations for institutional feeding programs should be based on the portion of recommended dietary allowance of food aid recipients it is intended to fulfill. Title II food commodities might provide beneficiaries' full energy, fat and protein requirements or may provide one or more basic staples to add to other foods provided by the community or another source. Based on WFP/ UNESCO/WHO recommendations for institutional feeding, programs that provide three meals a day should cover 100 percent of the daily recommended allowances for energy and protein for everyone in the institution (e.g., an orphanage). When only 2 meals are provided and recipients eat one meal at home or a third meal is furnished from some other source, then the two meals should together include 60-75 percent of the energy and 80-90 percent of the protein. Programs offering only a single meal should provide 30 to 45 percent of the recommended energy allowance and 60 to 70 percent of the protein allowance.¹

Other food items such as fresh fruits, vegetables, sugar, salt, etc. from some other sources (e.g. community contributions or institutional gardens) should be added to the food aid commodities to improve the palatability and micronutrient content of the meals. Fresh fruits and vegetables are essential for ensuring adequate micronutrients in the diet.

¹ WFP, UNESCO, WHO. School Feeding Handbook, Rome, 1999.

It is critical that the design of an emergency program does not compromise the adoption of appropriate and recommended feeding and dietary practices including exclusive breast feeding for infants under six months of age. The eligibility criteria for recipients, quantities, commodity mix, and recommendations for use of the rations should be consistent with official government policies and with standard practices used by USAID and the UN. Detailed recommendations for appropriate feeding practices are available from USAID's LINKAGES Project series titled *Facts for Feeding* at www.linkagesproject.org. See also Module 1: MCHN Programs. *HYPERLINK*

Table 1 below lists the recommended daily allowances for different age/sex groups for use in determining the specification of a ration package for on-site feeding programs.

Table 1: 100% Recommended Daily Allowances for Different Age/Sex groups*

Age/Sex	Recommended Energy Allowance (kcal/d)	Recommended Protein Allowance (g/d)	Fat (g/d)
Children 1-3 yrs	1300	16	45-58
Children 4-6 yrs	1800	24	40
Children 7-10 yrs	2000	28	45
Non-pregnant female 11-50 yrs	2200	47*	45-50
Female 51+ yrs	1900	50	36-42
Male 11-14 yrs	2500	45	50-56
Male 15-18 years	3000	59	57-67
Males 19-50 years	2900	60	55-65
Males 51+ years	1900	63	36-42
Pregnant female 20+ years ²	+300	+13	+6-7
Lactating female 1 st 6 mos	+500	+18	+10-11
Lactating female 2 nd 6 mos	+500	+15	+10-11

*From the National Research Council's *Recommended Dietary Allowances*. National Academy Press, 1989.

Target groups in NEHA programs may include individuals that cross a wide range of ages, and recommended allowances vary according to age, sex and physiological status. The nutritional needs of two groups stand out as being the most different from other ages, i.e. children aged three years and younger and pregnant and lactating women. Young children (< 2 years) require proportionally more fat in their overall diets (30 to 40 percent) compared to other age groups (20 percent). Women need extra energy and protein during pregnancy and lactation, which would require adding a supplement to

these women’s diets. For more details on nutritional needs of children and pregnant and lactating women, refer to *Module 1- MCHN Programs*. [HYPERLINK](#)

The recommended dietary balance of energy, protein, and fat for older children and non-pregnant, non-lactating adults is similar enough that all can be served from the same preparation. The differences among their particular needs relate more to quantity of food. Adolescent boys and men will need to eat more. Primary school-aged children and the elderly will need less. To specify ration size for a group of diverse ages, an average daily allowance can be used. The average should be a weighted average, depending on the age/sex distribution in the target group. Table 2 below provides a worksheet for calculating the average recommended energy allowance for mixed target groups.

Table 2: Table for Use in Calculating an Average Recommended Energy Allowance (REA) for Several age/sex Groups within an Institution.

Age/Sex	REA* (kcal/d)		% of target group
Children 4-6 yrs	1800	X	=
Children 7-10 yrs	2000	X	=
Non-pregnant female 11-50 yrs	2200	X	=
Male 11-14 yrs	2500	X	=
Male 15-18 years	3000	X	=
Males 19-50 years	2900	X	=
Elder adults 51+ years	1900	X	=
Average		100%	3=

*For high bulk rations add 5% for Atwater correction

Instructions for using this worksheet:

- 1) Insert the percentage of the target group that fits into the age/sex category in the third column for each line.
- 2) Multiply this percentage times the REA for each group and enter the product on the appropriate line in the last column.
- 3) Add the sum of the products in the last column, which will yield the average REA across the entire target group. (The percentages in column 3 should total 100%.)
- 4) For high bulk food aid commodities, multiply the Average by 1.05 (Atwater correction) to get the recommended energy allowance across the age/sex groups. This correction is to account for the varying fiber content, digestibility, and complex carbohydrate composition of high bulk commodities.

Box 2 below provides an example of how to calculate the average recommended energy and protein

allowance for children ages 4-10 years and adults.

Box 2. Example of Determining Average REA for a Target Population Across Age/Sex Groups (percentages are made up for this example)

REA*

Children 4-6 yrs	30%	X	1,800 Kcal	=	540 Kcal/day
Children 7-10 yrs	20%	X	2,000 Kcal	=	400 Kcal/day
Females 11-50 yrs	15%	X	2,200 Kcal	=	330 Kcal/day
Males 11-14 yrs	15%	X	2,500 Kcal	=	375 Kcal/day
Males 15-18 yrs	10%	X	2,900 Kcal	=	290 Kcal/day
Males 19-50 yrs	10%	X	1,900 Kcal	=	190 Kcal/day
AVERAGE	100%				2,125 Kcal/day

* From Table 1 above

2. Determining Nutritional Values for Take-Home Rations

NEHA programs often provide dry, uncooked food rations that will be prepared and consumed at home. Take home packages can be in the form of a full ration package providing an entire day's worth of kilocalories and protein, or a partial ration package that is used to fill the gap in the recipient's diet. Generally speaking, take-home rations are partial rations and based on the nutritional deficit of a target group. For an explanation on how to calculate ration specifications for take-home packages, please refer to *Module 1 – MCHN Programs*.

Additional food may be needed to compensate substitution effects (when home diets or institution diets are reduced because of on-site feeding), or leakage (when take-home rations are eaten by untargeted members of the family). Substitution or leakage may occur if global household/institution levels of food deficits are large (seasonally or year round). Past experience with food aid programs or trial and error may be the best way to determine the quantity of calories to add to account for leakage. In the absence of local data, one option is to double the ration to compensate the leakage. Other ways to address substitution or leakage are through education or by providing food commodities that promote self-targeting, i.e., that are more likely to be consumed by the target group because of income, cultural or age-group characteristics.

3. HIV/AIDS Affected Individuals

Special nutritional considerations must be given to the diet for people with HIV/AIDS; affected people suffer from appetite loss (anorexia), eat less food and have difficulty eating and therefore fail to meet their dietary requirements. HIV/AIDS also affects how the body uses the foods that are consumed and this results in nutrient malabsorption. Fevers and the infections that accompany an HIV infection also lead to greater nutrient requirements and poor use of the nutrients by the body. There are several illnesses that are common with people living with HIV/AIDS and that cause malnutrition. These include poor appetite or anorexia, losing weight, fever, diarrhea, frequent vomiting, oral thrush and other infections. Good nutrition for HIV affected people requires the consumption of an adequate amount of macronutrients such as proteins, carbohydrates and fats, and micronutrients, which include

vitamins and minerals. A deficiency in macronutrients, also known as protein energy malnutrition manifests itself in the weight loss and wasting that is typical of AIDS patients. This weight loss and wasting occurs as a result of reduced food intake, nutrient malabsorption and changes in metabolism. Vitamin A for HIV affected people is important for growth, immune function and maintenance of the lining of the respiratory, gastrointestinal, and gastro-urinal tracts. Consuming micronutrients especially vitamin A, B6, B12, iron, and zinc are important for building a strong immune system and fighting infections. Consuming fortified foods like the cereal blends and vegetable oil fortified with vitamin A as well as taking micronutrient supplements at early stages of HIV infection can slow weight loss and disease progression. In the case of vitamin A there is the likelihood of reduced transmission between mother and child and slowing the progression of the disease in infected people. Refer to the FANTA publication on “*Nutritional Care and Support for Persons Living with HIV/AIDS and other Affected Household Members*” at www.fantaproject.org.

STEP 4: RATION CALCULATION

After determining the ration specification for a proposed ration package, the following should be determined: (1) defining the ration package; (2) the total tonnage of commodities needed; and (3) the cost-effectiveness of the commodities selected. It is generally prudent to consider alternative rations in the initial planning stage in the event that the desired commodities may not be available in the quantities required.

1. Defining the ration package

The selection of rations for the different age groups will vary according to their nutritional needs. Energy, protein, and fat are the three main macronutrients and are of primary concern for growth, health, and recuperation from disease. A ration package composed of Title II commodities that contains sufficient energy and includes a variety of protein-rich commodities (cereals, blended foods, legumes) usually provides sufficient amount of protein for most of the population, but it is important to ensure that it provides enough for nutritionally vulnerable groups, such as young children and pregnant and lactating women. Fats and oils are a rich source of energy and also essential for health and the prevention of some diseases. Similarly, vitamins and minerals, referred to collectively as micronutrients, are essential to the health of people of all ages, but especially for growing children and women during their reproductive years. Below are considerations for defining ration packages for specific target groups per mode of distribution.

For on-site feeding: When on-site feeding is the sole source of food, it is important that food aid rations provide sufficient energy, protein, and fats to meet all of the needs of the specific target groups. Nutritional needs vary according to the age and sex of the target group and subsequently affect the type of commodity selected for the age group. Guidelines for commodity selection for the specific age groups follows:

- **For children ages 1-3:** These children require sufficient energy, protein and micronutrients for growth, health and recuperation from infections. Fats should provide from 30-40 percent of the overall dietary energy for this age group². Given the high nutrient needs and smaller stomach capacity of this target group, nutrient-dense food aid commodities, such as corn-soy blend (CSB) or wheat-soy blend (WSB) and refined vegetable oil, are recommended.

² WHO, *The Management of Nutrition in Major Emergencies*. Geneva, 2000.

- **For children ages 4-10:** Children this age still require that their caloric needs are met, but they need relatively less fat and micronutrients than their younger counterparts. Their diets should still include a combination of protein rich pulses and cereals, and about 20 percent of kilocalories should come from fats.
- **For Adults:** The diet should provide the minimum recommended amount of kilocalories. To cover the requirements for certain essential fatty acids, 17-20 percent of the ration calories should be provided in the form of fats or oil, but no more than 10% of energy should come from saturated fatty acids (found in all animal fats and some vegetable oils).³ With the exception of vegetable oil, all Title II commodities contain some protein. Therefore, if the ration is restricted to 20-40% fat and includes either a blended food or both a cereal and a pulse, the minimum protein requirement for this group will be provided.

Table 3 below provides examples of NEHA ration packages for on-site feeding of different target groups. They are organized according to how many meals are provided at the institution/feeding center. Two different ration packages are provided per number of meals provided. These rations are nutritionally adequate in terms of energy, fat and protein, but without additions of fresh condiments, sugar and salt they may not be palatable to a child. Refer to *Module 1-MCHN* for more about complementary feeding for young children.

³ WHO, *The Management of Nutrition in Major Emergencies*. Geneva, 2000

Table 3: Examples of NEHA Ration Packages for On-site Feeding of 1-3 Year Old Children

Commodities	If 3 meals (100% REA) are provided, below are 2 possible ration packages*		If 2 meals are provided, below are 2 possible ration packages*		1 meal is provided, below are 2 possible ration packages*	
CSB	150 g	150 g	150 g	200 g	120 g	50 g
Cereal flour** or Rice	90 g	100 g	35 g	0	0	40 g
Pulse	50 g	35 g	15 g	15 g	0	10 g
Oil	35 g	35 g	25 g	20 g	10 g	20 g
Calories	1372 kcal	1357 kcal	965 kcal	981 kcal	541 kcal	546 kcal
Protein	46 g	43 g	32 g	37 g	20 g	14 g
Percent Fat***	30%	34%	33%	31%	31%	39%

* It is doubtful that children 1-3 can eat this volume of food in the number of meals indicated. The food for 3 meals should be split to provide 3 meals with 2-3 snacks (CSB is an easily prepared snack); the food for 2 meals can make 2 meals plus 1-2 snacks; and the food for 1 meal a meal plus a snack.

** If cereal other than rice is unmilled, add 10% to account for caloric difference, and if cereal will be hand milled, add another 10% to account for milling losses.

*** This amount of fat is appropriate for children who are not breastfeeding. If children are being regularly breastfed, the fat content could be reduced to 20 percent fat.

Table 4 below provides examples of ration packages appropriate for on-site feeding of children ages four to six years. Fresh fruits and vegetables as well as sugar will increase the caloric and micronutrient content of these ration packages. Table 5 provides sample ration packages for an adult target group. Tables 3, 4 and 5 provide two sample rations per number of meals provided.

Table 4: Examples of NEHA Rations for On-site Feeding of 4-6 Year Old Children

Commodities	If 3 meals (100% REA) are provided, below are 2 possible ration packages		If 2 meals are provided, below are 2 possible ration packages		1 meal is provided, below are 2 possible ration packages	
CSB	150 g	100 g	0 g	100 g	200 g	0 g
Cereal flour* or Rice	250 g	210 g	250 g	100 g	0	150 g
Pulse	40 g	120 g	40 g	50 g	0	30 g
Oil	30 g	40 g	30 g	25 g	5 g	20 g
Kilocalories	1886 kcal	1899 kcal	1306 kcal	1130 kcal	797 kcal	822 kcal
Protein	57 g	62 g	31 g	35 g	34 g	20 g
Percent Fat	19%	21%	21%	23%	21%	22%

*If cereal other than rice is unmilled, add 10% to account for caloric difference, and if cereal will be hand milled, add another 10% to account for milling losses.

Table 5: Examples of NEHA Rations for On-site Feeding of Adults 19-50 years (50% each male and females)

Commodities	If 3 meals (REA = 2,600 kcal) are provided, below are 2 possible ration packages		If 2 meals are provided, below are 2 possible ration packages		1 meal is provided, below are 2 possible ration packages	
WSB	100 g	0 g	0g	100g	0 g	100 g
Fortified Cereal flour or Rice*	300 g	450 g	250g	100g	150 g	100 g
Pulse	200 g	150 g	150 g	50g	75 g	50 g
Fortified Oil	50 g	55 g	35 g	25g	20 g	15 g
Kilocalories	2,575 kcal	2,644 kcal	1737 kcal	1692 kcal	980 kcal	1,023 kcal
Protein	98 g	73.5 g	59.5 g	39 g	36 g	42 g
Percent Fat	21%	20%	20%	21%	20%	19%

* If cereal other than rice is unmilled, add 10% to account for caloric difference, and if cereal will be hand milled, add another 10% to account for milling losses.

For take home rations: Remember that a supplementary ration, by definition, adds to food from other sources, which also contribute nutritional energy, fat, protein, and micronutrients to the beneficiaries' diets. With regard to fat and protein, guidance that should be considered in the design of take-home ration packages for targeted exclusively to children or women are that:

Fats and oils in the diet (including the supplementary ration plus other foods eaten) should provide 20% of total energy intake of women of reproductive age and 30-40% of total energy for children up to 2 years of age, if they are not breastfeeding and 20% of total energy if they are breastfeeding.

- The protein needs of pregnant and lactating women are higher than those of non-pregnant/non-lactating women (7 grams per day (g/d) more during pregnancy and 14-19 g/d during lactation). On the other hand, the absolute protein needs of young children, are lower than the average in the population overall (only 25-35 g/d).

As noted above, it is important that mothers be encouraged to breast feed their young children and not use the donated foods to displace important breastmilk from the diet.

The likelihood that take-home rations will be shared with other family members (leakage) is high if global household levels of food deficits are large (seasonally or year round). Past experience with food aid programs or trial and error may be the best way to determine the quantity of calories to add to the ration to account for leakage. Other ways to address leakage include education and selection rations that promote self-targeting, i.e. that are more likely to be consumed by the target group because of income, cultural or age-group characteristics. For more guidance on developing take-home ration packages for women and children, refer to *Module 1- MCHN Programs*. [HYPERLINK](#)

Micronutrients: The micronutrient content of the ration package should also be considered, especially for nutritionally vulnerable target groups. All oil provided through Title II is fortified with vitamin A, an essential nutrient for the protection of the health of any population, but particularly young children. Forty grams (40g) of the oil provided supplies 2,400 IU of vitamin A, which satisfies children's full daily requirements and about 70% of adult requirements.

Whereas whole grain cereal, such as wheat and corn, are not fortified, all processed food cereals provided by Title II, with the exception of parboiled rice, are fortified with B vitamins (thiamin, riboflavin, folic acid, and niacin), vitamin A, calcium, and iron. Blended cereals (corn-soy blend and wheat-soy blend) are further fortified with zinc, B12, pantothenic acid, iodine, magnesium, vitamin C, vitamin D, and vitamin E.

The micronutrient content of blended cereals (see the Commodity Fact Sheets found in Part One of the CRG) are estimates.⁴ Because some of these vitamins are lost during storage and cooking, they do not accurately reflect the quantities available to the body at consumption. For example, up to 40 percent of vitamin A is lost from fortified cereals that is exposed for several months to heat, light and air.⁵ Minerals are not subject to deterioration by environmental factors, however, their bioavailability in

⁴ However, U.S. manufacturers of dry food aid commodities are now required to produce fortified food with average lot values of not less than 80 percent of the vitamin values and 100 percent of mineral values as specified in Part One of the CRG. In refined vegetable oil, the vitamin A levels are mandated to be between 60 and 75 IU/gram.

⁵ SUSTAIN, *Final Report of the Micronutrient Assessment Project*. Washington, D.C. 1999.

cereal can be greatly reduced by absorption inhibitors in the ration foods or in other foods commonly consumed, like tea and coffee.

2. Calculating the Total Amount of Food Commodities Needed

Once the ration package is determined, the total quantity of commodities needed can be calculated, usually in terms of metric tons (MT). To calculate the number of MT needed for each commodity in a general feeding or supplementary emergency ration package, use the following steps:

- ❑ Multiply the number of grams of the commodity per person per day times the total number of persons to receive the commodity.
- ❑ Multiply the total number of grams of the commodity times the number of days that the food will be provided to the target group.
- ❑ Determine the number of MT of commodity needed by dividing the total number of grams per program period by 1,000,000 (number of grams in a MT).
- ❑ Complete the same calculation for each commodity (vegetable oil, cereal, cereal blend, or legume) that comprises the ration.

Box 3 below provides an illustrative example of how to calculate the total amount of commodities needed to provide on-site feeding ration package to children ages 1 to 10 years a general feeding emergency ration package to 200 for one year (365 days).

Box 3: Calculating Total Amount of Commodities Needed for On-Site feeding of 200 Children 1-3 years for One Year (using the sample ration package in column 1 of Table 3).

OIL

- 1) Multiply grams of vegetable oil per person times 200 times 365 days
 $35 \text{ g oil} \times 200 = 7,000 \text{ g} \times 365 \text{ days} = 2,555,000 \text{ grams}$
- 2) Divide the total number of grams of oil by 1,000,000 (the number of grams in a MT)
 $2,555,000 \text{ g.} \div 1,000,000 = \mathbf{2.55 \text{ MT of fortified, vegetable oil}}$

CSB

- 3) Multiply grams of Corn Soy Blend cereal (CSB) person times 200 times 365 days.
 $150 \text{ g} \times 200 = 30,000 \text{ g} \times 365 \text{ days} = 10,950,000$
- 4) Divide the total number of grams of cereal-soy blend 1,000,000
 $10,950,000 \div 1,000,000 = \mathbf{10.95 \text{ or } 11 \text{ MT of CSB}}$

WHEAT FLOUR

- Multiply grams of wheat flour per person times 200 times 365 days.
 $90 \text{ g wheat flour} \times 200 = 18,000 \text{ g} \times 365 \text{ days} = 6,570,000 \text{ grams}$
- 5) Divide the total number of grams of wheat by 1,000,000
 $6,570,000 \div 1,000,000 = \mathbf{6.57 \text{ MT of wheat flour}}$

PULSES

- 6) Multiply grams of pulses per person times 200 times 365 days.
 $50 \text{ g} \times 200 = 10,000 \text{ g} \times 365 \text{ days} = 3,650,000$
- 7) Divide the total number of grams of pulses 1,000,000
 $3,650,000 \div 1,000,000 = \mathbf{3.65 \text{ MT of pulses}}$

3. Determining Cost-effectiveness of Ration Packages

Cost may not be the primary factor in determining the ration package. Food preferences and energy requirements for cooking (e.g., fuel wood, etc.) and potential market disincentives may outweigh cost considerations. However, the cost-effectiveness of the commodity may help in determining whether it is cost-effective and/or appropriate for the food aid component of a NEHA program. CSs should determine the primary objective of the food aid program and conduct the appropriate cost-effectiveness analysis.⁶

It is helpful to calculate the cost-effectiveness of desired commodities in terms of cost per unit of nutritional value (1 kilocalorie or 1 gram of protein) or income transfer value (in U.S.\$ to the recipient). This provides information about which commodities provide the most nutritional benefits or highest contribution at the lowest cost to the project. (See the *Overview* chapter for an example of such calculations as cost per nutrient value.)

⁶ Cost also refers to costs to the project associated with a. In some projects, in-country transportation and storage costs and special handling costs may be critical; however, these costs may be similar for most commodities. For each project, first decide which of these cost elements are most relevant.

Cost-Effectiveness per Income Transfer Value: The cost-effectiveness per income value is determined by the value to the recipient compared to the overall cost of the program. For example, if a recipient receives a commodity that would cost them \$0.40 in the local market, this is considered a \$0.40 value to the family or local institution. If providing the same commodity only costs the program \$0.33, the program would be cost-effective. A commodity is considered cost-effective if the cost of providing that commodity to a recipient is lower than the cost of the commodity in the local market. The more the commodity's local market value exceeds the program cost, the more cost-effective the program. See Box 4 below for an illustrative example of how to calculate the cost-effectiveness of income transfer value.

Box 4- Example of An Illustrative Cost-Effectiveness Calculation

- 1) First, calculate the cost of one kg of wheat flour to the household or local institution if purchased in the local market. This example uses the following (made up) figures:
1 kg wheat flour = \$0.40 cost to household for local market purchase.
- 2) Calculate the total program costs to provide one metric ton of wheat flour. This includes the cost of the commodity plus transportation costs.
 $\$228 \text{ (per MT)} + \$100 \text{ (transportation)*} = \328
- 3) Then, divide the total program costs to provide one metric ton of flour by 1,000 (there are 1,000 kilograms in a MT). The costs of one MT of wheat flour plus transportation costs are \$328.
 $\$328 \div 1,000 = \0.328 or 33 cents (rounded) cost to program to provide 1 kilo wheat flour

Thus, for every \$0.33 in program costs, the program is providing \$0.40 value to the recipient. Ratio of local cost to program cost is $\$0.40 \div \$0.33 = 1.2$. The larger the ratio, the more cost-effective the program, i.e., the higher the dollar value to the consumer for every dollar of program cost.

**Transportation costs vary from situation to situation; a rule of thumb for development programs is to add 30-50% of the commodity for transportation costs.*

During the initial planning period it is advisable to consider alternative rations as a contingency measure. For example, a desired commodity may not be available, cannot be shipped in a timely manner or may not be appropriate for any number of unexpected reasons. The identification of a range of acceptable commodities makes easier to design a variety of ration packages. Also, changes in commodity availability, prices, and packaging can alter the relative cost-effectiveness of ration packages. It is useful to develop at least one alternative ration package so that it can be compared for cost and other trade-offs.

Take into consideration the following when designing an alternative ration package:

- Select culturally acceptable and physiologically suitable foods for NEHA recipients.
- Design rations that meet specifications using no more than three commodities per ration, unless good reasons exist to use more commodities.
- Use commodities that provide the maximum gain to recipients at lowest cost to the project.

- ❑ Based on the cost per unit of nutritional and/or income transfer value provided to the recipient, use the most cost-effective commodities and design at least one alternative package if a new project is being planned.
- ❑ Compare the nutritional and/or income transfer values of currently used rations with specifications and key suitability criteria.

STEP 5: RANKING AND SELECTION

It is important to rank ration packages commodities in order to select the most cost-effective and appropriate rations to meet program objectives. Cost plays a role in the size and effectiveness of projects. This calculation involves decisions about which cost elements to consider. At a minimum, the illustrative price list in Annex V and current in-country transportation and storage costs can be used. Other factors to consider are:

- **Market disruptions:** The Bellmon determination must ensure that the local market is not disrupted. Market considerations in the local areas where programs are targeted might also come into play. For example, it may be less disruptive to provide certain foods in the lean season rather than the harvest season. Guidance on conducting the Bellmon analysis may be found online at www.usaid.gov/hum_response/ffp/bellmon.htm.
- **Logistics and management:** Some commodities may impose undue management or cost burdens due to unusual local conditions (e.g., transportation, storage, handling, pilferage, accounting costs, etc.) or unsuitable packaging for the shelf life of the commodity.

The usual sources of data for considering potential market disruptions and logistical problems include past evaluations of the same or similar programs, interviews with host government authorities and local and international PVOs as well as discussions with international organizations (such as the World Bank, the United Nations), USAID, USDA Agricultural Attaches and Economic/Commercial Officers at U.S. Embassies.

Nutritional value, income transfer value, total cost, and other factors, such as potential market disruptions or logistical constraints can, now be ranked for the proposed and the alternative ration packages. They might also be ranked by cost. Decisions to change ration packages can be made easily and less arbitrarily when alternative rations and their main attributes have been worked out in advance.

III. RESOURCE LIST

1. Food and Nutrition Technical Assistance (FANTA) Project, Academy for Educational Development, 1825 Connecticut Avenue, NW, Washington, D.C., 20009-5721. Tel: 202-884-8000; Fax 202-884-8432. E-mail: fanta@aed.org; Web site www.fantaproject.org. FANTA has the following guides:
 - *Agricultural Productivity Indicators Measurement Guide*. Patrick Diskin
 - *Anthropometry Indicators Measurement Guide (Draft)*. Bruce Cogill
 - *Food For Education Indicator Guide (Draft)*. Joy Miller del Rosso and Gilles Bergeron
 - *Food Security Indicators and Framework for Use in the Monitoring and Evaluation of Food Aid Programs*. Frank Riely, Nancy Mock, Bruce Cogill, Laura Bailey, and Eric Kenefick
 - *Improving the Use of Food Rations In Title II Maternal/Child Health and Nutrition Programs (Draft)*. Serena Rajabiun, Beatrice Rogers, Margarita Safdie, Anne Swindale
 - *Infant and Child Feeding Indicators Measurement Guide*. Mary Lung'aho
 - *Measuring Household Food Consumption: A Technical Guide*. Anne Swindale and Punam Ohri-Vachaspati
 - *Nutritional Care and Support for Persons Living with HIV/AIDS and other Affected Household Members* (forthcoming)
 - *Potential Uses of Food Aid to Support HIV/AIDS Mitigation Activities in Sub-Saharan Africa*.
 - *Sampling guide*. Robert Magnani
 - *Water and Sanitation Indicators Measurement Guide*. Patricia Billig, Diane Benahmane and Anne Swindale
2. Food Aid Management (FAM), 1625 K Street, NW, 5th Floor Washington, DC 20006. Tel: (202) 223-4860, Fax: (202) 223-4862; Web site www.foodaid.org. Provides USAID documents (FY 1990-ongoing).
3. Linkages Project. *Facts for Feeding* (English, Spanish, French). Academy for Educational Development, 1825 Connecticut Avenue, NW, Washington, D.C., 20009-5721. Tel: 202-884-8000; Fax: 202-884-8977; E-mail: linkages@aed.org; Website: www.linkagesproject.org.
4. National Research Council. *Recommended Dietary Allowances*. National Academy Press, Washington, D.C., 1989.
5. SUSTAIN. *Final Report of the Micronutrient Assessment Project*. Executive Summary available on web site: www.sustaintech.org.
6. USAID/BHR. *U.S. International Food Assistance Report 1999*. January 2000. Web site: www.usaid.gov/hum_response/farpt1999.
7. USAID/BHR. *Commodities Reference Guide (CRG): Section 1-4*. April 1999. Web site: www.usaid.gov/hum_response/crg.
8. USAID/BHR/FFP. *Monetization Field Manual PL 480 Title II Programs*. October 1998. Web site: www.usaid.gov/hum_response/ffp/monetiz.htm.

9. USAID/BHR/FFP. *Title II Guidelines for Development Programs*. January 2000. Web site: www.usaid.gov/hum_response/ffp/dappaa.htm.
10. USAID/CDIE. *Performance Monitoring and Evaluation Tips*. 1996. Web site: www.usaid.gov/pubs/usaid_eval/#02.
11. WHO. *Energy and Protein Requirements: Report of a Joint FAO Expert Consultation*. Geneva, 1985.
12. WHO. *Management of Severe Malnutrition: A Manual for Physicians and Other Senior Health Workers*. Geneva, 1999.
13. WHO. *The Management of Nutrition in Major Emergencies*. Geneva, 2000.