This tool will help you to:

- Determine if your municipality is likely to experience food shortages during a pandemic
- Estimate how much food your municipality may need to acquire in order to distribute emergency food rations to protect households from food shortages
- Understand the type of food that should be distributed and the nutritional requirements for food rations
- Determine where and how to properly store emergency food stocks
- Recognize when it will be necessary to begin distributing food.
- Understand how food can be safely distributed during a pandemic

Who will implement this tool:

- The municipal leadership team
- Relevant staff from the following municipal sectors:
  - Agriculture and Natural Resources
  - Food Safety
  - Food and Nutrition
  - Transportation
  - Public Safety and Security
  - Communications

Overview: Why You Need to Act Now

An influenza pandemic could very well disrupt normal supplies of food to your municipality even before the virus crosses municipal borders. In many countries food security is handled at the national level, however during a severe pandemic, national governments may be overwhelmed and may be unable to provide timely assistance to every municipality. It is important to start planning for emergency food distribution in your municipality now, in the likely event that your municipality will have to become food self-sufficient for a period of time. Unless you have planned to provide emergency food supplies during the pandemic, your municipality may experience high rates of death and suffering. For more information on how a pandemic might contribute to hunger and starvation, turn to Tool 7, Food Security in a Pandemic.

What Do We Do If the Pandemic Virus Has Arrived and There Is No Time to Prepare?

If you find that the pandemic is on your doorstep, and you are not prepared to distribute emergency food supplies, the municipal leadership team and supporting sectors must immediately undertake the following essential steps. Once you have completed step A as a team, delegate the remaining steps to relevant sectors so that the work can be carried out rapidly and simultaneously. Guidance for each step is provided in the sections that follow.

A. Assess the potential need for food. Estimate how much food is available in the municipality and how much more food will be needed to protect the population from possible food shortages. Sections 1 and 2 provide guidance on how to do this.

B. Work with private sector providers and any humanitarian agencies present in the municipality to secure essential nutritious food stocks for later distribution. Section 2 provides guidance on how to do this.

C. Work with various public and private organizations to set up and operate temporary warehouses to receive, store, and distribute the food using social distancing measures. Section 3 provides guidance on how to do this.

D. Coordinate with members of the municipal leadership team that are working to identify those most at risk of food insecurity to ensure that the most needy are the people that get food rations first. Section 4, and Tools 8, Classification of Food Security Risk Locations, and 9, Identification of People Most at Risk of Food Insecurity, will help you do this.
LEADERSHIP DURING A PANDEMIC: WHAT YOUR MUNICIPALITY CAN DO

Capacity to Respond:
Level of Risk:
Distribute emergency food rations once the pandemic begins to reduce the ability of people to obtain sufficient amounts of food to meet their daily needs. Section 5 provides guidance on how to determine the appropriate time for food distribution. Section 6 provides guidance on safe distribution methods that can be used during a pandemic.

F. Coordinate with the municipal communications team to ensure that effective public messages about local food availability and emergency distribution are conveyed during the pandemic. Section 7 of this tool and Tools 12–14, on Crisis and Emergency Risk Communications, provide guidance on how to do this.

B. Capacity to Respond

3

these two critical questions.

The chart on the following page lists important things to consider in order to address these two critical questions.

SECTION 1: ASSESSING THE POTENTIAL NEED FOR FOOD

To determine how you will acquire and safely distribute emergency food, you must first assess the potential need for food in your municipality and the current ability you have to respond to food shortages that could last as long as 12 weeks. To do this, the municipal leadership team should focus on two critical aspects of emergency planning:

A. Level of Risk: How likely is it that your municipality will experience food shortages during a severe pandemic?

B. Capacity to Respond: How able is the municipality to respond rapidly and effectively when the pandemic arrives?

The chart on the following page lists important things to consider in order to address these critical aspects of emergency planning.

SECTION 2: SECURING NUTRITIOUS FOOD STOCKS FOR EMERGENCY DISTRIBUTION

WHAT TYPE OF FOOD ITEMS SHOULD WE ACQUIRE?

Gather nutritious food items that have an extended shelf life. The table on page 4 provides examples of foods that will not spoil. The items most needed will depend on what foods people are able to obtain by their own means. For example, if there are numerous mango and banana trees in the municipality, on common and private property, and virtually every household owns poultry, people will be able to meet some of their nutritional needs from the protein and fruit and vegetable groups. This information should be combined with the identification of who is most at risk of suffering from hunger during a severe pandemic. To identify those most at risk, use Tool 8, Classification of Food Security Risk Locations, and Tool 9, Identification of People Most at Risk of Food Insecurity.

If you are preparing beforehand, it may also be helpful for the team to understand how food markets function and how households are connected to markets. This provides additional insight into the level of risk to food insecurity that exists in your municipality. Contact central government authorities, or representatives from nongovernmental organizations and international aid agencies, to find out if a recent market assessment has been done in the area. If so, ask them to share the results.
## HOW MUCH FOOD WILL WE NEED?

Your population size and the existing level of food security and vulnerability will determine how much food will be needed every week to feed your population, and how much food you will need to store to last through a wave of 6 to 12 weeks.

Start by determining the number of calories of food energy it would take to feed the entire municipality for one week. It is unlikely that you will have to, or will be able to, provide all the food for the entire population of the municipality because some households will be able to meet all of their food needs, and some will be able to meet some of their food needs. If the municipal leadership team has had sufficient time to encourage household preparedness and to identify those at risk of food insecurity, you may have a good idea of the number of people in the municipality that will need assistance, and the number that are completely or partially food secure. If you do not know, do not worry. Simply use the entire population as a starting point.

For initial planning purposes, use the average minimum daily energy requirement, which is 2,100 calories per person per day. This is based on a typical population in a warm climate undertaking light physical activity.

It is also very important to make sure that the food stockpiled for emergency distribution provides adequate nutritional energy. Make sure that you are acquiring enough protein and fats in your stockpiled foods. Emergency food rations should meet the following requirements.

- **Protein**: 10 to 12 percent of the energy in the diet should be in the form of protein (i.e., 52g to 63g of protein per day).
- **Fat**: At least 17 percent of the energy in the diet should be in the form of fat (i.e., 40g of fat per day).
- **Micronutrients**: Essential micronutrients should also be included, particularly vitamin A (found in vitamin A fortified oil, fortified flour, or fortified sugar) and iodine (found in iodized salt).

The table on the following page shows a full ration for one person for one day. We will use these figures to estimate how much food is needed to feed a municipal population of 10,000 for one week.

### Example of Amount of Food Needed to Feed a Population of 10,000 for One Week

<table>
<thead>
<tr>
<th>Food Items</th>
<th>Average amount needed per day for one person</th>
<th>Amount needed per person per week (per day amount x 7)</th>
<th>Amount needed to feed a population of 10,000 for one week (per person per week amt. x 10,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize, rice, bulgur</td>
<td>400g</td>
<td>2800g</td>
<td>28,000kg</td>
</tr>
<tr>
<td>Legumes</td>
<td>60g</td>
<td>420g</td>
<td>4,200kg</td>
</tr>
<tr>
<td>Vitamin A fortified oil</td>
<td>25g</td>
<td>175g</td>
<td>1,750kg</td>
</tr>
<tr>
<td>Fortified blended foods, such as corn-soya</td>
<td>50g</td>
<td>350g</td>
<td>3,500kg</td>
</tr>
<tr>
<td>Sugar</td>
<td>15g</td>
<td>105g</td>
<td>1,050kg</td>
</tr>
<tr>
<td>Salt</td>
<td>15g</td>
<td>105g</td>
<td>1,050kg</td>
</tr>
</tbody>
</table>

These sample figures highlight the importance of determining the amounts and locations of local food stocks. By knowing what you have on hand, you will be better prepared to determine what additional food stocks the municipality needs to acquire.

### WHERE CAN WE OBTAIN FOOD FOR EMERGENCY DISTRIBUTION?

Emergency food stocks can be obtained either as donations or by direct purchase. If the pandemic virus has already arrived in the municipality, look closely at what food stocks are available locally or from sources relatively close by and determine how these could be best managed to benefit the community as a whole. Purchase, transport, and stockpile basic, high-energy, high-nutrient foods as quickly as possible—hopefully before prices begin to rise and transportation systems break down. You can attempt to make agreements with local merchants to acquire all available food with the understanding that they will be repaid following the pandemic. This type of agreement may also be possible for surplus agriculture.

If you are building up your emergency food stocks in a pre-pandemic phase, and farms or food processing plants are present in the municipality, buying and storing bulk foods in times of abundance (when prices are lowest) will be cost effective.

### Potential sources for emergency food stock items

<table>
<thead>
<tr>
<th>Why they might donate food items or sell them at a reduced cost</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local food producers</td>
<td>Overproduction</td>
</tr>
<tr>
<td>Packers</td>
<td>Inventory control</td>
</tr>
<tr>
<td>Distributors</td>
<td>Packaging errors</td>
</tr>
<tr>
<td>Wholesalers</td>
<td>Changes in product formulas</td>
</tr>
<tr>
<td>Retail markets</td>
<td>Items are approaching a sell-by date</td>
</tr>
</tbody>
</table>
If there is no surplus food in your municipality when you are alerted that the pandemic virus is in your area, immediately contact central government representatives to find out about availability and location of national food stocks for emergencies and prepositioned donations from national and international food aid agencies. United Nations agencies like the World Food Programme and international non-governmental organizations (NGOs) are regularly implementing food programs in many countries. Regular food programming is likely to be shifted to emergency food distribution. However, even if these organizations are in your region, there is no guarantee that you will be able to acquire help from these sources as they are likely to be overwhelmed by many requests for assistance.

Section 3: Storing Emergency Food Stocks

Two types of food storage areas will be used to store emergency food rations: warehouses and temporary distribution centers.

What is a warehouse?

A warehouse is the place where all the donated and purchased emergency food stocks will be stored until it is time to distribute rations. At the warehouse, food rations will be prepackaged, usually in quantities to last each household for one week, and then delivered to temporary decentralized distribution centers throughout the municipality once the pandemic virus arrives.

Depending on the size of your municipality, the municipal leadership team will need to set up and operate one or more warehouses.

What is a temporary distribution center?

Temporary distribution centers are the places that people will come to pick up their food rations. Once social distancing measures are in place, representatives of each household will need to retrieve their rations on a schedule that avoids waiting in line.

Temporary distribution centers may include churches, restaurants, schools, community centers, small enclosed markets, and other organizations and businesses that are not functioning normally during the pandemic.

Where should warehouses and distribution centers be located?

Warehouses should be easily accessible for trucks or other forms of transport that you will use to deliver food stocks to distribution centers. They should not be located in areas that are prone to flooding and should have adequate drainage in case of flooding.

If you are setting up a warehouse during a pandemic, the location of the warehouse may be temporary, such as a school, a community center, or a large enclosed market and in this case could also function as a temporary distribution center. If you are setting up the warehouse in preparation for a pandemic or other disaster, you might locate the warehouse in rented or donated commercial storage space.

Temporary distribution centers should be dispersed throughout the municipality in both urban and rural areas. The number and location of these centers will depend on how people’s homes are spread through the area and where the most vulnerable members of the community live. Because transportation systems and fuel supplies may be disrupted during a pandemic, the people who will be receiving food rations should be able to easily access the centers by foot, bicycle, horse, or other non-fuel form of transportation.

Carefully consider any complications presented by the location. For example, a warehouse only accessible by a road that is commonly washed out during poor weather will not be very helpful should the pandemic arrive during the rainy season. A distribution center accessible only by public transportation will not be helpful if transportation networks are disrupted.

Wherever you choose to store emergency food stocks, ensure the following:

- Hazardous substances such as pesticides, petrol, and other chemicals are not stored with food.
- Food is not stored on the floor. The storage space should have a strong concrete floor or packed earth to protect against rodents burrowing under stacks.
- The storage space should be cool, dry (protected from rain), and well-ventilated.

How much warehouse space will we need to store emergency food stocks?

To gauge how much warehouse space may be needed use the following estimates:

- One metric ton (1000 kg) of a bagged food item requires approximately 2 cubic meters of usable storage space.
- One metric ton (1000 kg) of vegetable oil in tins requires approximately 1.4 cubic meters of usable storage space.

Use Section 2 of this tool to determine how much food you will need to store to protect the municipal population’s food security.

How long should we store emergency food stocks?

The storage period for most food stocks is usually less than three months and almost never for more than twelve months. Food stocks received earliest should be delivered first, a principle known as FIFO (first in, first out). It becomes easy to apply this principle if all acquired food is stacked in sequence and arranged so that staff can easily access all food stocked in the warehouse. FIFO should not be applied to food stocks that are fine for people to eat but will not store well; for example, food that is approaching the expiration date or food that has been repackaged from damaged packages. It is better to issue such food without delay, even before delivering older undamaged stock. The drawing on page 8 illustrates well-planned storage that will help you apply the principle of FIFO.
TOOL 11: DISTRIBUTION OF EMERGENCY FOOD DURING A PANDEMIC

HOW WILL WE MOVE THE FOOD FROM THE CENTRAL WAREHOUSES TO THE TEMPORARY DISTRIBUTION CENTERS?

Once the pandemic arrives, and you have determined that it is time to distribute the emergency food rations, you will need to quickly and securely move the food stock from the warehouses to the temporary distribution centers. This will require municipal vehicles or donated trucks or animal power. When selecting the vehicles, choose closed vehicles if possible, which offer greater security and minimize damage to the food stocks that could result from exposure to the elements.

WHO COULD CONTRIBUTE TO THE MANAGEMENT OF THE CENTRAL WAREHOUSES AND THE TRANSPORT OF FOOD DURING THE PANDEMIC?

Because at the peak of the pandemic up to 40 percent of the municipal workforce could be ill or caring for ill family members, it will be essential to have people in place that can maintain warehouses and transportation. In addition to municipal staff, a number of representatives from local groups may have good knowledge, resources, and experience to contribute to ensuring adequate food distribution for the municipality. Representatives may include, but are not limited to, members from the following groups:

- Local food distributors, producers, or processors whose regular business has been disrupted by the pandemic
- Transportation companies that may have restrictions placed on travel outside of the municipality
- NGOs, or community-based or religious organizations that have experience with inventories, communication, and organizing

Tool 16, Maintenance of Essential Services will help you develop a continuity of operations plan. Other groups in your municipality will be organizing volunteers to help during the pandemic. Be sure that you communicate with them about needed manpower for food distribution. (For more information, refer to Tool 17, Volunteer Coordination.)

Use the following table to begin planning for emergency food storage.

<table>
<thead>
<tr>
<th>Warehouse Operations</th>
<th>Transportation Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving and screening incoming food stocks</td>
<td>Organizing the transport of donated and purchased items to and from the warehouse</td>
</tr>
<tr>
<td>Sorting and storing products in assigned bins and shelves</td>
<td>Maintaining municipal vehicles</td>
</tr>
<tr>
<td>Managing inventories on the FIFO principal and controlling for expiration dates</td>
<td>Recruiting additional volunteer transports like vehicles and drivers</td>
</tr>
<tr>
<td>Preparing food rations for distribution</td>
<td>Maintaining up-to-date records on vehicle usage and providing timely reports on transportation status and needs</td>
</tr>
<tr>
<td>Maintaining up-to-date inventory records on all food items and providing the team with accurate reports on the status of supplies</td>
<td>Relaying information among other emergency services and the public in general (drivers often function as a vital communications link because they are closest to what is happening on the ground)</td>
</tr>
<tr>
<td>Providing regular maintenance, pest control, and security for facilities</td>
<td></td>
</tr>
</tbody>
</table>

Some of the responsibilities involved in managing and transporting food are as follows:

- Receiving and screening incoming food stocks
- Sorting and storing products in assigned bins and shelves
- Managing inventories on the FIFO principal and controlling for expiration dates
- Preparing food rations for distribution
- Maintaining up-to-date inventory records on all food items and providing the team with accurate reports on the status of supplies
- Providing regular maintenance, pest control, and security for facilities

- Organizing the transport of donated and purchased items to and from the warehouse
- Maintaining municipal vehicles
- Recruiting additional volunteer transports like vehicles and drivers
- Maintaining up-to-date records on vehicle usage and providing timely reports on transportation status and needs
- Relaying information among other emergency services and the public in general (drivers often function as a vital communications link because they are closest to what is happening on the ground)
SECTION 4: DETERMINING WHO SHOULD GET FOOD FIRST

When food is in short supply, it will be necessary to prioritize who gets food first. There are two tools in the toolkit that can help you do this.

Tool 9, Identification of People Most at Risk of Food Insecurity, is a step-by-step assessment tool that will help you determine who is most affected by poverty and hunger in the municipality, and who may suffer most from the impact of a pandemic in terms of the ability to meet household food needs.

Tool 8, Classification of Food Security Risk Locations, provides a measure of the relative risk in one local area (municipality, village, or neighborhood) of a region in relation to another area in the same region. Risk level is classified into three categories: highest, medium, and lowest. The ranking is based on the likelihood that households will suffer from hunger and lost income during a pandemic.

SECTION 5: DETERMINING WHEN IT IS TIME TO DISTRIBUTE EMERGENCY FOOD RATIONS

Knowing when it is time to distribute emergency food rations will be critical to making the most efficient use of stockpiled foods. If food rations are distributed too early, the municipality may run out of food before the pandemic wave is over. If food rations are distributed too late, people may die from starvation, or they may migrate to other areas in search of food. The municipal leadership team should begin to distribute food when the pandemic has begun to affect households’ ability to obtain sufficient nutritious food to meet their daily energy needs.

Pandemic influenza can reduce the ability of people to obtain food in three major ways:

1. By causing illness and death. Illness can prevent people from harvesting home-grown or raised foods, or from going to the local market, food pantry, or community kitchen.

2. By disrupting normal food supplies. Illness or trade restrictions outside the community or municipality can prevent food supplies from reaching your local markets.

3. By producing unemployment. Transportation disruptions can make it hard for people to get to their jobs. The disruption of business inputs, supplies, or sales outlets can force employers to lay off local workers and thus reduce or eliminate household income.

The municipal leadership team must remain constantly alert to key indicators in the following list that will (1) warn of the start of problems that may result, and (2) trigger the need to respond in time. The indicators may happen in any order and may happen all at the same time.

**SECTION 6: DISTRIBUTING EMERGENCY FOOD RATIONS**

Most food distribution to individuals and households will be done through the temporary distribution centers discussed in Section 3 of this tool. Some people will not be able to pick up rations, including the disabled, the elderly, or households where everyone is too ill to leave. Volunteers will need to be enlisted to directly deliver rations to these homes.

The central warehouse will provide prepackaged food rations to the many decentralized distribution points, usually in quantities to last each household for one week. Amounts will vary depending on the number of people in each household.

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**Indicator #1**
Less food is available in local markets or from local production.

Possible problems that may occur as a result:
- Normal sources of food may not be available in the near future.
- Prices of available food may rise drastically, making staple food items unaffordable to those on limited incomes.
- Without alternative sources of food, people may resort to theft or mass migration.
- Vulnerable groups may be at risk of malnutrition and even starvation.

Actions to be taken:
- Begin to distribute food rations following the guidelines in Section 6.

**Indicator #2**
Economic systems are disrupted.

Possible problems that may occur as a result:
- Many workers may lack enough income to buy food for their households.
- Without alternative sources of cash, people may resort to theft or mass migration.

Actions to be taken:
- If food is still available in markets and inflation has not caused drastic increases in the price of food items, consider barter shops, fair price shops that sell basic items at controlled or subsidized prices, and methods of linking people to existing regional or national cash transfer programs.
- If food is not available in markets, or prices have risen dramatically, begin to distribute food rations following the guidelines in Section 6.

**Indicator #3**
Each week more people are sick or dying from the influenza.

Possible problems that may occur as a result:
- Continued transmission of the virus
- Dehydration if water is not available
- Loss of large sections of the workforce
- Loss of main household income earner may result in destitution and poverty.

Actions to be taken:
- Begin to deliver food and water to homes of affected families. Refer to Section 6.
- Connect with health leaders to determine needs for home-based feeding.
- Provide food transfers to hospitals and medical centers.
LEADERSHIP DURING A PANDEMIC: WHAT YOUR MUNICIPALITY CAN DO

HOW MUCH FOOD SHOULD BE GIVEN TO EACH HOUSEHOLD?

For each available food item, calculate an average food ration for one person. A sample ration is provided in the table below. Using average rations helps cut down on the manpower needed to calculate household rations based on the various nutritional requirements of each household member. Minimum average rations should provide 2,100 calories per person per day. The average amounts tend to even out within families.

<table>
<thead>
<tr>
<th>Sample Daily Ration</th>
<th>Nutritional Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>400g of maize, rice/soy</td>
<td>Energy 2,100 calories</td>
</tr>
<tr>
<td>60g of legumes</td>
<td>Protein 58g</td>
</tr>
<tr>
<td>25g of oil (vit.A fortified)</td>
<td>Fat 43g</td>
</tr>
<tr>
<td>50g of fortified blended foods (corn-soya blend)</td>
<td></td>
</tr>
<tr>
<td>15g of sugar</td>
<td></td>
</tr>
<tr>
<td>15g of salt</td>
<td></td>
</tr>
</tbody>
</table>

To determine how much food should be given to each household, multiply the number of people in each household by the average daily ration. Handout 1 provides the number of calories that various age/gender need. This will be helpful in determining rations for households that are known to have greater than average needs (i.e. a household with three males between the ages of 15 and 50 and three pregnant or lactating females).

Sometimes in emergencies people consume entire food rations before it is time to receive another. If there is time, write on the food bag the number of days that the ration must last. It will be very important to make sure that food rations provide adequate nutritional energy. If possible, a professional nutritionist should be consulted to help with this process. If a nutritionist is not available, make sure that protein contributes 10–12 percent of the total calories, and fats contribute 17 percent. Essential micronutrients should also be included, particularly vitamin A and iodine.

For some households, the ration will only need to supplement what they are getting from household supplies. These partial rations should be designed to help meet the minimum energy requirements. Often they consist of less grain, but their contents should be determined once you know how the pandemic is affecting food supplies in the municipality. Rations should supplement the foods that households are having trouble accessing.

WHAT TYPE OF DISTRIBUTION METHOD SHOULD BE USED?

Due to transportation disruptions in other regions, the communities in your municipality could run short on food or cash to purchase food even though the virus has not reached your municipality. The method used to get the food to the people will depend on whether or not influenza has spread to the municipality in epidemic proportions. In all cases, security should be provided to distribution centers.

SECTION 7: ADDITIONAL EMERGENCY FOOD MANAGEMENT RESPONSIBILITIES

BUILDING AWARENESS AND COMMUNICATION WITH THE PUBLIC

It is important to promote open and two-way communications with the public. Transparency is critical for building trust, support, and compliance for the food distribution program. Specific methods to inform the public about emergency food rations might include public awareness campaigns, nutrition education, emergency preparedness materials and events, emergency news bulletins, radio and TV announcements and interviews, telephone hotlines, and, if social distancing measures are not in place, public neighborhood meetings to explain the program. Tools 12–14, on Crisis and Emergency Risk Communications in this toolkit can provide more guidance in this area.

MONITORING AND REPORTING

Officials acting on behalf of the public must gain trust and confidence through transparency. Even if it is not possible to organize a formal monitoring and evaluation plan, the municipal leadership team and those implementing the food distribution program need to keep track of the process to ensure that the activities are happening according to plan in order to:

- make adjustments and changes needed to ensure compliance with the plan,
- ensure that all those in need are receiving assistance,
- check if the assistance is being used as expected, and
- verify that people are not forced to resort to migration in search of food or employment or forced to use negative coping strategies such as selling assets or land to get money to purchase food.

Everyone involved in implementing the food distribution program will need to pay close attention to these issues, maintain communication with the people receiving the food rations, and report their findings to the team. Tool 9, Identification of People Most at Risk of Food Insecurity offers guidance on updating food and livelihood security information following a pandemic wave. This information can help you understand who has suffered the most from the pandemic’s impact and who has managed fairly well.
The table below lists the recommended daily allowances for different age/gender groups. The nutritional needs of two groups (young children and pregnant and lactating women) stand out as being the most different from other ages. 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.

**FOOD ENERGY REQUIREMENTS**

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

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

• CARE. 1998. *Food resources manual: or how you can learn to count and keep track of millions of bags of food*. Food Security Unit CARE USA.

