TOOL 10 HOUSEHOLD FOOD SECURITY PREPAREDNESS

PREPAREDNESS

This tool will help you to:

- Raise household awareness about the need to prepare for shortages of food, water, income, and essential services that may occur during a severe influenza pandemic
- Increase the ability of households to manage and survive in the event that an influenza pandemic disrupts regular food and water supplies or reduces household income

Who will implement this tool:

- The ***municipal leadership team***
- Municipal staff dedicated to community outreach
- Community outreach representatives and volunteers

OVERVIEW

WHY ARE HOUSEHOLD PREPAREDNESS ACTIVITIES IMPORTANT?

- Although households may have coped with natural disasters in the past, many have not experienced a disaster with extreme health impacts and a global disruption of goods and services. They may not be considering how a pandemic will debilitate the household in terms of sickness, lost income, or challenges obtaining food.
- National governments have historically been unable to respond efficiently to large, nationwide disasters because of limited staff and resources.
- International organizations that have responded to local disasters in the past will not have the staff or resources to respond to all pandemic-affected areas around the world to the extent required.
- Community-based organizations (CBOs) may provide critical assistance to households during the pandemic, but will themselves be struggling with illness, absenteeism, and closures.
- In other types of disasters, municipalities often provide public shelter and communities are encouraged to gather together to weather the shock. This type of response is not possible in a pandemic because restricting public gatherings is an important strategy that municipalities will use to reduce the spread of a virus. (For more information, see Tool 4, *Non-Pharmaceutical Interventions (NPIs): Actions to Limit the Spread of the Pandemic in Your Municipality.* For alternative ways to use public shelters, see Tool 5, *Triage: Prioritizing Care to Reduce Deaths*.)

Every community and household must do the best job possible to prepare for standing on their own for the duration of each pandemic wave.

WHAT YOU SHOULD DO IF THE PANDEMIC VIRUS *IS ALREADY PRESENT* IN YOUR MUNICIPALITY

If there is no time to prepare because the pandemic virus has already arrived in your municipality, use all available communication channels to spread the critical messages that will help to protect food security and livelihoods. You can use the same community channels that you are using to spread essential health and social distancing messages, such as newspapers, television, radio, websites, megaphones, loudspeakers mounted on vehicles, email lists, and telephone trees.

(For information about writing and sharing effective key messages, see Tool 12, *Fundamentals of Communication During Crises and Emergencies*, or the "Brainstorming" section of Tool 6, Session II: *Training for Community Health Responders*.)

PROTECT FOOD SECURITY AND LIVELIHOODS: CRITICAL ACTIONS FOR HOUSEHOLDS DURING A PANDEMIC

FOOD

- Eat food that will spoil first, for example, fresh vegetables and meat.
- If you have a lot of fresh food on hand, use traditional food preservation methods to prevent this food from spoiling.
- Try to regulate the food you eat each day so that what you have on hand will last 6 to 12 weeks, but do not threaten daily nutritional needs of any family member.
- Organize exchanges among neighbors using ***social distancing*** measures so that you are able to increase the variety of foods you eat.

WATER

- Collect and store water in covered containers in case water supplies become scarce.
- Do not store water in containers that have been used to store nonfood products.
- Buy household bleach, purification tablets, or iodine so that you can purify water if your sources become contaminated.

MONEY

Only spend cash on items that are absolutely necessary to keep your household healthy for 6 to 12 weeks. Food, water, cooking fuel, and medical supplies are priorities. *You will find "How to" information for food and water actions in later sections of this tool.*

WHAT YOU SHOULD DO IF THE PANDEMIC VIRUS *HAS NOT YET* ARRIVED IN YOUR MUNICIPALITY

STEP 1: RAISE HOUSEHOLD AWARENESS

LEARN, PLAN, AND PREPARE WHILE YOU ARE STILL ABLE TO DO SO

The most important first step to help households cope with a pandemic will be to raise their awareness of how a pandemic could affect them and what can be done to prevent or lessen the impact. During a severe pandemic, *everyone* in the municipality may suffer because food and basic goods are not available, or because available food and basic goods are unaffordable or physically inaccessible, or because available food and water is not safe, perhaps because it has been improperly stored or prepared. In addition to at-risk groups who struggle daily to maintain food security, people who are usually able to access enough money to meet their daily needs could suddenly become food insecure because they cannot go to work due to illness, caregiving responsibilities, social distancing measures, or government closures. Furthermore, they may not be able to access saved cash through banks or Automatic Teller Machines (ATMs) if the global health impact (high rates of work absenteeism and death) disrupts banking systems. If the municipal leadership team provides this group with sufficient preparedness information, they may be able to protect themselves during a pandemic, which will in turn reduce the need for municipal assistance to protect food security.

Organize public meetings, radio and TV interviews and skits, bulletins, and other regular communications through which the public has the opportunity to learn about pandemic influenza and how it could affect not only their health but also their food security and overall household well-being. Awareness and planning for all wealth groups can also help to reduce the chance that the better-off may take actions (for example, hoarding) that directly affect the food security outcome of the poor (no food left in markets because of hoarding). (For more information, see Tool 7, *Food Security in a Pandemic*; Tool 2, *Presentation on the Threat of a Severe Influenza Pandemic*; and Tools 12, 13, and 14 in the *Crisis and Emergency Risk Communications Section*.)

STEP 2: INCREASE THE ABILITY OF HOUSEHOLDS TO MANAGE AND SURVIVE A SEVERE PANDEMIC

A wide variety of community representatives, staff, and volunteers may be willing and able to reach out to households and share information about effective ways to produce, preserve, and store food; treat and store water; and create barter and savings groups. It is not critical for this group to be food security experts. However, they should be trusted by the public, and skilled at planning, helping, and communicating with others. Potential community outreach volunteers may include representatives from the following groups and organizations:

- Local nongovernmental organizations (NGOs)
- Community-based organizations (CBOs)
- Religious congregations
- Professional and labor associations
- Local businesses
- School teachers
- Community health and social workers
- Women's groups
- Youth and sports organizations
- Commercial cooperative organizations
- Government extension agencies.

Tool 17, *Volunteer Coordination* offers detailed guidance to help you develop volunteer support that can strengthen pandemic awareness, preparedness, and response. Make sure that all community outreach volunteers receive training on the threat of the pandemic as provided in this Toolkit, as well as training and technical assistance in the four key preparedness actions listed in the box below.

Four Key Preparedness Actions

A. Prepare for food shortages
B. Prepare for shortages of safe water
C. Prepare for disruptions in household income
D. Strengthen neighborhood support systems

HOW CAN HOUSEHOLDS LEARN ABOUT THE FOUR KEY ACTIONS THAT WILL REDUCE POSSIBLE HARDSHIP AND HUNGER DURING A PANDEMIC?

Organize community meetings to provide clear information about how households can prepare for and respond to a severe pandemic adequately and in time. Do this *before* an influenza pandemic reaches your municipality. Organizing meetings *sooner rather than later* is critical: once the pandemic reaches the community, public gatherings should be avoided to prevent the spread of the disease.

At community meetings, help households develop a preparedness plan that addresses the four key preparedness actions listed on page 3. Handout 1 contains a sample plan that has been filled in by an imaginary household. Once community outreach volunteers have received training, use this sample plan to help them practice identifying the strengths and gaps in household preparedness, so that they are ready to offer guidance. Handout 2 contains a blank household plan.

There will be three general categories that households fall into with respect to the ability to prepare for a pandemic:

Group 1: Those who are able to stockpile sufficient quantities of emergency food and water on a moment's notice.

All guidance in this tool is relevant. Specific attention should be placed on the consequences of hoarding found under the heading "Household Action 1: Prepare for Food Shortages."

Group 2: Those who are able to stockpile emergency food, water, and cash by putting aside a little bit at a time.

All guidance in this tool is relevant.

Group 3: Those who struggle with hunger and poverty every day.

Some guidance in this tool will be difficult for Group 3 because it involves setting aside a little extra food or money, when these households and individuals seldom have enough to meet daily food and income needs. This group should be identified as soon as possible so that they can be referred for food rations, cash transfers (if appropriate), volunteer aid, and other existing assistance services in the municipality that may be able to help them meet their nutritional and income needs during the pandemic. Tool 9, *Identification of People Most at Risk of Food Insec*urity provides guidance on this topic. Tool 7, *Food Security in a Pandemic* offers suggestions for actions that the municipal leadership team can take to reduce potential food security problems for vulnerable groups.

HOUSEHOLD ACTION 1: PREPARE FOR FOOD SHORTAGES

Each household must prepare for food shortages that may occur during a pandemic because global, regional, and local transportation systems are disrupted, or because people panic and begin hoarding too much food, or because of the way the pandemic unfolds in your municipality.

Each household should store enough nonperishable food (foods that will not spoil) to feed household members for 6 to 12 weeks. In a severe and prolonged pandemic, civil disorder, theft, and conflicts over common property foods could become a problem. To be certain that household food security is protected, even people who are growing food and raising livestock or poultry should build up emergency food stockpiles. If a household does not have adequate storage space, they may need to create a food storage area; guidance is provided later in this tool.

Community outreach volunteers may need to help households with:

- Calculations for determining how much food to store
- Identifying nutritional gaps in household storage plans
- Suggestions for nonperishable replacements of perishable foods

WHEN SHOULD HOUSEHOLDS START BUILDING EMERGENCY FOOD STOCKS?

There is no way to predict when a pandemic may occur! Accumulate emergency food stocks as soon as possible. Purchasing or growing food before a severe pandemic impacts the world helps to avoid the steep price increases and shortages that are likely to occur.

Set aside a little at a time:

- If you grow your own food, save a bit of each nonperishable crop surplus.
- If you own livestock and/or poultry, determine the number of animals that will be needed to provide food for your household for 6–12 weeks, and do not slaughter or sell these animals before the pandemic arrives.
- If you buy most of your food at markets, purchase extra portions during each shopping trip until sufficient emergency food stocks are accumulated.

WHAT TYPES OF FOOD SHOULD BE STORED?

The types of food available for storage will depend on supplies in local markets, the foods that people grow, foods that can be gathered in the wild or on common property, and eating preferences. In general, households should store foods that are nonperishable, are relatively affordable, and are capable of meeting the nutritional needs of household members over an extended period (one to three months). The box below provides a list of recommended foods to store at home. Use this list as a starting point, and add nonperishable foods that are widely accepted in your region.

Recommended Nonperishable Foods to Store at Home

Protein

- Dried beans and peas
- Dried fish and meats
- Canned fish and meats
- Peanut butter

Grains

- Rice
- Corn
- Wheat
- Flour
- Pasta
- Cereal
- Oatmeal
- Whole grain crackers
- Instant baby rice cereal

Fats

- Cooking oil

Fruits and Vegetables

- Tubers
- Dried fruits and vegetables
- Canned vegetables, fruit, tomatoes
- Canned/bottled 100 percent fruit juice
- Tomato sauce

Shelf-Stable Milk

- Infant formula (if the mother is not breastfeeding)
- Nonfat dry milk
- Dehydrated milk
- Canned evaporated milk

Miscellaneous Foods

- Canned or jarred baby food
- Dehydrated and canned soups, stews, chili
- Salt, sugar, other condiments

If you have a lot of fresh food on hand, use traditional food preservation methods to prevent this food from spoiling.

Important! Only consider setting aside surplus food *after* the daily nutritional needs of all family members have been met.

HOW MUCH FOOD WILL EACH HOUSEHOLD NEED?

On average, the nutritional requirement for an individual is 2,100 calories per day (This is actually kilocalories or kcals.) Complex carbohydrates from grains contribute the most calories. Protein should make up 10 to 12 percent (52 to 63g) and fats should make up approximately 17 percent (40g). Using these standard guidelines, the table offers an example of how much food one adult would need to meet nutritional needs for one month. Handout 3 provides detailed guidance to help you figure out the specific nutritional needs of different groups of people based on age, sex, and whether women are pregnant or lactating.

Adapt the table to include the nutritionally balanced foods that are preferred by people living in your region. Remind people that fresh fruits and vegetables are the best choice, but if households do not have secure access to gardens, farms, or common property where these items are grown, they can ensure that they will have a source of essential micronutrients during a pandemic by stocking canned or dried fruits and vegetables.

Food	Quantity for 12 weeks—one adult*
Grains (corn, rice, wheat)	35 kg
Protein (dry beans, peas, lentils)	5 kg
Fats (oil)	3 kg (3–4 liters)
Vegetables	84 cans/ 6 kg dried
Fruits Juice	84 cans/ 6 kg dried 84 cans
Sugar	1.25 kg
Salt	1.25 kg

* Based on the minimum ration of 2,100 kilocalories per day with protein comprising 10 to 12 percent of total energy, and fat comprising 17 percent of total energy. See Handout 4 for energy requirements of children, breastfeeding women, and others

HOW MUCH IS TOO MUCH? THE CONSEQUENCES OF HOARDING

Equally important to the messages shared about storing *enough* food will be messages related to the public about the consequences of storing *too much* (hoarding). Those in a community who are better off may begin to hoard food in fear and panic. Hoarding will not only make food less available, it will also lead to higher food prices which makes it more difficult for those on limited incomes to purchase enough food. History has shown that hoarding in panic can lead to famine deaths.

You can help reduce hoarding by taking the guesswork and panic out of planning. Encourage households to keep a diary of the food they consume and the essential supplies they use in a week. Once they have done this for several weeks they will be able to estimate the amount that they will need to get through a wave of the pandemic by multiplying each week's amount by 12 (the greatest number of weeks that the World Health Organization believes a wave might last). Remind households that by purchasing far more than they need, they risk contributing to a neighbor's hunger and suffering.

HOW SHOULD STORED FOOD SUPPLIES BE MANAGED?

Once emergency food stocks have been built up, households must periodically rotate items in the stockpile—eating stored food first and replacing it with newly acquired food. Encourage households to record the date that they place an item into storage on the container to help them keep track of which items were placed in storage first.

During the pandemic, try to regulate the food you eat each day so that what you have on hand will last 6 to 12 weeks, but do not threaten daily nutritional needs of any family member.

CONSTRUCTING AND IMPROVING HOUSEHOLD FOOD STORAGE SPACES

Even when community food storage spaces exist, encourage households to establish or improve existing household food storage spaces. At community preparedness meetings, ask people to share ideas about how they currently store food. People in the community who own or work on land may have knowledge of traditional food storage methods that are appropriate for your region. For example, some foods, such as mature potatoes, cassava, and jicama can be stored underground, or in trenches or pits for short periods of time. Invite a local agriculture extension agent to community meetings to discuss and provide details for these traditional storage options.

Although the rural areas often have the advantage of more land, many foods can be grown in urban backyards and even on apartment patios and porches. Avoid locating gardens and other food projects in distant or unprotected areas as theft tends to increase in times of scarcity.

Brainstorm with each other about ways that households could create extra storage space using existing supplies. Neighbors may decide to construct a shared space. During the pandemic, social distancing measures will need to be followed when people access shared spaces. There is also a risk that as food becomes scarcer, food supplies in shared spaces may be stolen.

There will be a number of households in all municipalities that will not be able to afford to build additional food storage space. Identify these people as soon as you are able and develop strategies to help them protect and store emergency food and supplies.

WHAT CAN CAUSE STORED FOOD TO GO BAD?

If food is not stored properly it may go bad before people eat it. For example, if beans are stored at too high a temperature or stored in an area with too much moisture they become very hard, which makes them difficult to cook properly. Spoiled food creates waste, is less nutritious, and can cause illness which makes it hard for people's bodies to benefit from nutrients that are available in other foods they are eating.

The storage area must take into consideration four conditions that can cause food to go bad:

- **Moisture:** The storage area should be cool, dry, and well ventilated.
- **Insects:** Wood ashes, dried pepper, and other local plant products can help prevent insect infestation. Chemical insecticides should be avoided as they may cause poisoning.
- **Animals:** Food should not be stored on the ground or floor. Try to construct the storage areas so that insects and rodents cannot easily get to food stocks. Traps can be set, but chemical pesticides should be avoided.
- **Air:** Although it may not be possible in all cases, storing food in air-tight containers will prevent foods from spoiling due to decay, mold, and insects. Sealed containers are the next best option.

GROWING AND RAISING YOUR OWN FOOD

In emergency situations, particularly during a prolonged influenza pandemic, growing your own food can greatly improve your chances of survival. How much a single household can grow depends on how much land and water is available and the kinds of plants the local climate and soil will support. Given adequate access to land and water, a well-planned home garden has the potential to supply most of the non-staple foods that a household needs to ensure proper nutrition, including roots, tubers, vegetables fruits, legumes, herbs, and spices. Root crops tend to be rich in energy, while legumes are important sources of protein, fat, iron, and vitamins. Green leafy vegetables, and yellow- or orange-colored fruits, provide essential vitamins and minerals, particularly foliate, and vitamins A, E, and C.

Municipal agriculture extension agents and local development NGOs, as well as neighbors who grow their own food, are excellent sources of information and assistance. Contact these groups as soon as you can and encourage them to speak at community preparedness meetings about local foods that grow well in the area, foods that can be grown quickly, and foods that will store well for up to 12 weeks. Develop a list of these foods and share this information through available communication channels (i.e. radio, newspaper, printed bulletins). Provide links to contacts where people can find out more about growing their own food. If the municipality has the financial resources to distribute short-cycle seeds to households, this can be a low-cost way of increasing local food supplies.

Start Now! There's no time to waste. An emergency can happen at any time. It takes 2 to 5 months for vegetables to mature and for animals to reproduce; it takes 1 to 10 years for trees to produce fruit or nuts.

WHAT TYPES OF NONFOOD ITEMS SHOULD BE STORED?

The most obvious and urgent nonfood need in the event of a household emergency is drinking water. Household Action 2 provides guidance on storing and treating water.

Other essential nonfood items include fuel for cooking and heating, batteries for flashlights and radios, candles and matches, bleach or purification tablets to ensure clean drinking water, medicines, and first aid supplies. It may be difficult to obtain these items in the event of shortages or transportation disruptions. By acquiring them now, you will be better prepared to manage a 6 to 12 week influenza pandemic wave, as well as many other disasters.

HOUSEHOLD ACTION 2: PREPARE FOR SHORTAGES OF SAFE WATER

As illness spreads during a severe pandemic the number of workers that maintain public works may decrease. As a result, water quality and availability may deteriorate. Healthy adults can only live 3 to 4 days without drinking water—highlighting the critical importance of storing enough water to meet the needs of all household members should municipal supplies be disrupted. Ensuring the continuity of basic services will be a priority of the municipal leadership team (See Tool 16, Maintenance of Essential Services.) But in the event that water services are disrupted, all households must be alerted before the pandemic arrives in your municipality of the risk of water shortages. Deliver a clear strong message which states that storing a supply of safe clean water is one action that can greatly reduce household suffering during a prolonged pandemic wave.

How much water should be stored?		
Survival needs: water intake (drinking and food)	2.5–3 liters per person/per day	Depends on: the climate and individual physiology
Basic hygiene practices	2–6 liters per person/per day	Depends on: social and cultural norms Because one of the key flu fighting actions is increased hand washing, it is recommended that all households store 6 liters of water per person per day for personal hygiene
Basic cooking needs	3–6 liters per person/per day	Depends on: food type; social and cultural norms
Total water needed per person per day		7.5–15 liters

Adapted from the Sphere Project. 2004. *Humanitarian charter and minimum standards in disaster response.*

Not only must water be available, it must be safe. Without safe water—clean, uncontaminated, and fit to drink—diarrhea, other intestinal illnesses, and poisoning are frequent and, in turn, contribute to malnutrition and dehydration. During a pandemic, if people are sick with these diseases it will be more difficult for their immune systems to fight off the pandemic virus and it will be more difficult for them to absorb nutrients from the foods they are eating.

WHAT MAKES WATER UNSAFE?

Even without the threat of a pandemic, obtaining safe drinking water is a challenge for many households. Water contamination is a common problem in urban and peri-urban areas where people lack access to basic sanitation infrastructure and adequate water services. It is also a common problem in rural areas where people must collect water from unimproved sources such as lakes, rivers, dams, unprotected wells, or springs that may contain harmful bacteria, water-borne diseases, or chemicals. Oftentimes the source of water is safe but water becomes contaminated because of poor storage or hygiene practices such as:

- Unclean hands touch clean drinking water or drinking or cooking utensils.
- Animals get into uncovered containers.
- Water stored in containers that initially held something other than food becomes contaminated by non-food chemical residue.

EDUCATE THE PUBLIC ABOUT INCREASED HYGIENE AND PROPER WATER STORAGE

During a pandemic, the amount of attention given to household hygiene may decrease as caregivers become ill or die. The municipal leadership team and community outreach volunteers should share messages with the public that stress the importance of increased hygiene to prevent the contamination of household drinking water which could lead to other debilitating diseases. Equally important will be increasing the public's knowledge about how to store water safely. The messages below should be shared before, during, and after the pandemic.

Hygiene Tips to Reduce Water Contamination	Water Storage Tips
• Wash hands frequently—with soap or ash is by far the best, but even when soap is not available, hand washing decreases your chance of catching intestinal illnesses. • Dispose of feces properly. • Avoid touching drinking water with hands—take drinking water out of container with a ladle or cup. Avoid drinking directly from water container. • Clean drinking utensils with hot water and soap.	• Do not use containers that have previously been used to store non-food products. • Store drinking water separately from water used for personal hygiene needs. • Store drinking water in narrow-mouthed, lidded containers to help prevent contamination.

HOW CAN HOUSEHOLDS SAFELY TREAT WATER?

If there is a question about the safety of available water, households must be aware of methods for treating it before drinking. Water that is going to be treated should be clear. If it is cloudy, filter it through clean cloths or let it settle and draw off the clear water before treating it. Except where noted, the methods listed below can kill disease-causing bacteria and microorganisms. They *cannot* purify water that has been polluted by toxins and chemicals.

Boiling: Bring water to a rolling boil and boil for one minute.

Chlorination: You can use regular household bleach (without scents or additives) to purify water. It is very important to read the label on the bottle to see how much chlorine to use per each liter of water because chlorine comes in different strengths.

As a general rule, use two drops of household bleach (4–6 percent sodium hypochlorite) per liter of clear water and four drops per liter of cloudy water. Mix the water and bleach thoroughly by stirring or shaking in the container and let stand for 30 minutes.

Iodine: You can use a tincture of iodine from a first aid kit or the local pharmacy to disinfect water. As a general rule, add five drops per liter of clear water, or 10 drops per liter of cloudy water to disinfect the water. Mix water and iodine thoroughly by stirring or shaking water in the container and let stand for at least 30 minutes.

Purification Tablets: Some drugstores or sporting goods stores sell commercial tablets which release chlorine or iodine to disinfect water. Follow the directions on the label for proper use.

Filtration: Clay filters or slow sand filtration can reduce many large biological contaminants. Rapid sand filters cannot by themselves purify water, but they can prepare it for treatment by chlorination.

Solar Disinfection: Solar disinfection can also purify water to make it safe to drink. Fill a clean plastic bottle three quarters full, shake it 20 times, and then fill the rest of the bottle. Leave the bottle out in direct sunlight (for example, on the roof of a house) for six hours straight. If it is cloudy leave the bottle out for two full days. Solar disinfection only works if the water is clear.

After treatment, water should be stored in clean, covered containers.

HOUSEHOLD ACTION 3: PREPARE FOR INCOME DISRUPTIONS

Because households may only be thinking about how a pandemic virus could affect their health, it is important to stress the ways in which a severe pandemic might impact household income. Cash shortages may arise during a severe pandemic for a number of reasons.

- People may not be able to get to work due to illness, caregiving, social distancing measures, or transportation disruptions.
- People may not be able to access banking systems and ATMs for the same reasons, or because banking systems have shut down.
- Remittances may decrease because people all over the world are experiencing decreased income.
- Households may have to spend more money on healthcare or funeral expenses.
- Credit may not be available.

Two ways that people can prepare for a loss of household income are saving and barter.

Saving is the practice of regularly putting aside a portion of the wages you earn, or of the crops you grow, or of the animals you raise. The idea is to not use or spend these savings until you absolutely need to, which is usually during times of crisis when you do not have sufficient other resources available. Sometimes, groups of households save or pool their resources (e.g., cash, food, animals). In an emergency, people in savings groups can withdraw part, all, or even more than what they have contributed, with the obligation to pay the amount back when times get better.

The municipal leadership team and community outreach volunteers can help households identify existing savings groups in their community, or help them to form new savings groups. Should any group in the municipality be identified as lacking access to savings services, discussions should be held with existing registered groups (microfinance institutes, cooperatives, producer groups, development programs, etc.) to determine the possibility of offering savings services to these groups. Tool 9, *Identification of People Most at Risk of Food Insecurity*, can help you to determine which groups might not be able to access savings services.

Barter is essentially a practice of trading goods and services without using money. Everybody needs food, and most people have skills, abilities, or property that they can use to produce other goods or services that the people who have an excess supply of food are willing to trade for. Examples of bartering include:

- Trading one kind of food for another
- Providing a needed service (repairing a roof, building a food storage space, providing childcare) or goods that are made and normally sold (furniture, candles, clothes) in exchange for food
- Loaning unused land to a neighbor who doesn't have enough land to grow crops but has the physical ability to work it—both households can share in the harvest

Remember! Families that struggle each day with poverty and hunger will not be able to afford to prepare financially for disruptions in household income. It is important to identify these households so that they can be referred for food transfers, cash transfers (if appropriate), volunteer aid, and other existing assistance services in the community that may be able to help them meet their needs during a severe pandemic.

Yes! You can barter DURING a pandemic!

Sharing among households in the same vicinity can be accomplished even when social distancing is imposed.

People can talk across a fence or street and can leave and pick up bartered items on a porch or patio without coming into close contact. Exchanged items should be disinfected (with diluted household bleach for example) before using.

To get the barter process started, encourage small groups of households to identify what each household can produce or provide and what each household may need. Individual arrangements can then be made for sharing resources when the need arises. Handout 3 can help households keep track of who they will share resources with and how and when they will exchange items once social distancing measures are imposed. The success of bartering efforts can be increased by an overall strengthening of neighborhood support systems.

HOUSEHOLD ACTION 4: STRENGTHEN NEIGHBORHOOD SUPPORT SYSTEMS

Neighborhood support systems can be a good source of information for identifying vulnerable and isolated households during a pandemic. The municipal leadership team should encourage neighborhood groups to contribute in this way.

The ability of communities and households to bounce back after a disaster can hinge on strong and organized social networks. If measures are not taken to strengthen neighborhood support systems, civil disorder, conflicts, and riots may be more frequent during a prolonged and severe pandemic, and the overall ability of the community to get back to normal following the pandemic will likely deteriorate.

Poor households typically depend on strong social relationships in times of need more often than better-off households, but the conditions of a severe pandemic will require that all economic and social groups strengthen and combine their social systems. Diverse social networks will have a greater pool of resources to draw from. Encourage neighborhood groups to develop detailed plans for sharing resources while respecting social distancing requirements that may be in place. Once a pandemic arrives in your municipality, this will probably require establishing staggered pick-up or access times. See Handout 4 for a sample plan that can help households plan for resource sharing within their neighborhood group.

Strong social networks can also contribute to how risk and crisis communication is received and responded to. Small and isolated social networks contribute to slower information flow, and at times, reduced trust for authoritative sources of information, especially if authorities are perceived as being responsible for stressful circumstances, such as limited water or food supplies. Larger and more integrated social systems may have stronger ties to the political structures and sources of information that will help keep their community functioning during a severe pandemic wave. Strong neighborhood networks will also be more likely to organize volunteer response efforts that help the community survive as a whole. (For more information, see Tool 17, *Volunteer Coordination*.)

SAMPLE HOUSEHOLD PANDEMIC PREPAREDNESS PLAN FOR TRAINING COMMUNITY OUTREACH VOLUNTEERS

Imagine that a household has completed the following preparedness plan. Based on the information they have provided, identify strengths and gaps in their plans. Using Tool 10, Household Food Security Preparedness as a guide, as well as the knowledge gained from the other tools in the pandemic toolkit, what recommendations would ensure that this household is prepared for food and water shortages, disruptions in income, disruptions in basic services, and limited public assistance?

Household Pandemic Preparedness Plan

Family size: 5
Family members/ages: mother, grandmother, children ages 15, 7, and 3

	Grains (corn, rice, wheat)	Protein (dry beans, lentils, peas)	Fats (Oil)	Vegetables & Fruits	Sugar	Salt
How much food will our household need to survive a pandemic wave?						
How much food do we have on hand right now? List not only stored food, but fruit trees, vegetables, livestock, poultry, etc.	50 kg rice 25 kg corn meal	6 chickens Daily eggs 25 kg beans 3 cans powdered milk	6 liters corn oil	In home garden, maize, squash, chili, mango, yucca, avocado, guava.	5 kg	2 kg
How much more of each food group do we need to obtain?						
Where and how will food be stored?	*In sacks and buckets outside of the house.*					
How much water will our household need to survive a pandemic wave?	*5 people in our family = 100 liters a week.*					
How much water do we have available?	*We have piped water. There is plenty available.*					

How much water do we need to obtain so that we have this amount on hand?	*We do not need to collect–we have piped water to the house that we will depend on.*
How will we store our water? How will we purify it, if necessary?	*We have clean piped water to the house. I don't think we'll need to purify or store any.* *We do have household bleach, but don't know how to use it to purify water.*
How much money can we begin to save each week, so that we have cash during a pandemic?	*None*
Do we have all necessary non-food items on hand? What else do we need to obtain?	*Connected to municipal gas service for cooking fuel.* *We have candles, matches, and first aid supplies.* *We have bleach, but do not know how to use it to purify water.*
What do we have (surplus goods) that we might be able to offer our neighbors in trade?	*We grow more mangos and maize than our household usually eats, but we do not want to share these because we are afraid that it may be all the food we may have when other foods run out.*
What do we need that we cannot purchase and may need to trade for?	*Don't know.*
What volunteer services could we offer to our community during a pandemic?	*We have a ham radio and 15-year-old son has some experience using it to communicate.* *Grandmother used to teach school.*
How will we stay informed about recommended community guidance during a pandemic?	*Radio.*
Who do we contact in the municipality if we find that we do not have enough food or cash to last 6 to 12 weeks?	*Don't know.*

HOUSEHOLD PANDEMIC PREPAREDNESS PLAN FOR TRAINING COMMUNITY OUTREACH VOLUNTEERS

Household Pandemic Preparedness Plan

Family size:
Family members/ages:

	Grains (corn, rice, wheat)	Protein (dry beans, lentils, peas)	Fats (Oil)	Vegetables & Fruits	Sugar	Salt
How much food will our household need to survive a pandemic wave?						
How much food do we have on hand right now? List not only stored food, but fruit trees, vegetables, livestock, poultry, etc.						
How much more of each food group do we need to obtain?						
Where and how will food be stored?						
How much water will our household need to survive a pandemic wave?						
How much water do we have available?						

How much water do we need to obtain so that we have this amount on hand?	
How will we store our water? How will we purify it, if necessary?	
How much money can we begin to save each week, so that we have cash during a pandemic?	
Do we have all necessary non-food items on hand? What else do we need to obtain?	
What do we have (surplus goods) that we might be able to offer our neighbors in trade?	
What do we need that we cannot purchase and may need to trade for?	
What volunteer services could we offer to our community during a pandemic?	
How will we stay informed about recommended community guidance during a pandemic?	
Who do we contact in the municipality if we find that we do not have enough food or cash to last 6 to 12 weeks?	

CALORIES (ENERGY FROM FOOD) REQUIREMENTS

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

The bulk of people's calories will come from carbohydrates in the form of grains, vegetables, fruits, and other sources. Additional dietary needs include:

- *Protein: 10 to 12 percent of the energy in the diet should be in the form of protein (i.e., 52 g to 63 g of protein).*
- *Fat/oil: At least 17 percent of the energy in the diet should be in the form of fat (i.e., 40 g of fat).*
- *Micronutrients: A range of micronutrients—vitamins and minerals—are required for good health. These can come from eating a variety of foods.*

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.

100% Recommended Daily Allowances for Different Age/Gender Groups*

Age/Gender	Recommended Energy Allowance (kcal/d)	Recommended Protein Allowance (g/d)	Fat (g/d)
Child 1–3 yrs	1300	16	45–58
Child 4–6 yrs	1800	24	40
Child 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 yrs	3000	59	57–67
Males 19–50 yrs	2900	60	55–65
Males 51+ yrs	1900	63	36–42
Pregnant female 20+ yrs	+300	+13	+6–7
Lactating female 1st 6 months	+500	+18	+10–11
Lactating female 2nd 6 months	+500	+15	+10–11

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

HOUSEHOLD PLAN FOR SHARING RESOURCES WHEN SOCIAL DISTANCING MEASURES ARE IN PLACE

Family name:	
What other households will we share resources with? List name of each household and resource shared.	
How and where will we exchange items?	
For shared resources such as water tanks or food storage units that will need staggered access times: What time of day will my family access this resource?	

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