

# **Field Operations Guide**

**for  
Disaster Assessment  
and Response**



**Office of Foreign Disaster Assistance**

**Bureau for Humanitarian Response  
U.S. Agency for International Development**

**In cooperation with the USDA Forest Service,  
International Forestry,  
Disaster Assistance Support Program**

# Metric to English

## To convert                      into                      multiply by

### Lengths

mm	inches	0.03937
cm	inches	0.3937
meters	inches	39.37
meters	feet	3.281
meters	yards	1.0936
km	yards	1093.6
km	miles	0.6214

### Surfaces

cm <sup>2</sup>	square inches	0.155
m <sup>2</sup>	square feet	10.764
m <sup>2</sup>	square yards	1.196
km <sup>2</sup>	square miles	0.3861
hectares	acres	2.471

### Volumes

cm <sup>3</sup>	cubic inches	0.06102
cm <sup>3</sup>	liquid ounces	0.03381
m <sup>3</sup>	cubic feet	35.314
m <sup>3</sup>	cubic yards	1.308
m <sup>3</sup>	gallons (USA)	264.2
liters	cubic inches	61.023
liters	cubic feet	0.03531
liters	gallons (USA)	0.2642
ml	teaspoon	0.2
ml	tablespoon	0.666
ml	fluid ounces	0.333
liters	cups	4.166
liters	pints	2.128
liters	quarts	1.053

### Weights

grams	grains	15.432
grams	ounces	0.03527
kg	ounces	35.27
kg	pounds	2.2046
kg	tons (USA)	0.001102
kg	tons (long)	0.000984
tons (metric)	pounds	2204.6
tons (metric)	tons (USA)	1.1023
tons (metric)	tons (long)	0.9842

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## Introduction

The *Field Operations Guide for Disaster Assessment and Response (FOG)* has been developed by the U.S. Agency for International Development/Bureau for Humanitarian Response/Office of Foreign Disaster Assistance (OFDA) as a reference tool, for individuals sent to disaster sites to perform initial assessments or to participate as members of an OFDA Disaster Assistance Response Team (DART).

The FOG contains information on general responsibilities for disaster responders; formats and reference material for assessing populations at risk; DART position descriptions and checklists; forms useful for tracking and accounting activities; descriptions of OFDA stockpile commodities; general information related to disaster activities; and a glossary of acronyms and terms used by OFDA.

In the development of the FOG, OFDA has drawn on several sources for information including: the *OFDA DART Manual*, the United Nations High Commissioner for Refugees *Handbook for Emergencies*, the World Health Organization booklet *New Emergency Health Kit*, the United Nations Children's Fund handbook entitled *Assisting in Emergencies*, the United Nations *Guide To Food and Health Relief Operations for Disasters*, the Bureau for Refugee Programs *Assessment Manual for Refugee Emergencies*, *USAID Handbook 8* and policy paper on *International Disaster Assistance*, reference materials from the Centers for Disease Control and Prevention, OFDA logistical records, and *OFDA Assessment Guidelines*.

The search and rescue (SAR) component of the DART has a separate operations guide which specifically deals with DART SAR activities.

It is hoped that the FOG will serve as a useful source for a variety of field operations information, in a compact, usable format. Comments for revision can be directed to:

USAID/OFDA  
Operations Support Division  
Room 1262-A NS  
Washington, D.C. 20523

This version of the FOG represents a revision of the original *Guide to Field Operations for Disaster Response* produced in 1992. The FOG was developed for OFDA by the U.S. Department of Agriculture/Forest Service under its International Forestry's Disaster Assistance Support Program (DASP). DASP is managed jointly by the Forest Service and the USDA's Foreign Agricultural Service/International Cooperation and Development, with funds and direction provided by USAID/OFDA under USDA RSSA BOF-0000-R-AG-5091

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## **Policy Guidelines**

The U.S. Agency for International Development/Bureau for Humanitarian Response/Office of Foreign Disaster Assistance (OFDA) has the responsibility to coordinate the U.S.

Government's response to disasters abroad. It coordinates this response with the affected country, international agencies, other donor governments, and private voluntary organizations. This authority to provide foreign disaster relief comes from the Foreign Assistance Act of 1961, as amended. OFDA provides assistance:

To preserve life and minimize suffering by providing sufficient warning of natural events which cause disasters.

To foster self-sufficiency among disaster-prone nations by helping them achieve some measure of preparedness.

To alleviate suffering by providing rapid, appropriate response to requests for aid.

To enhance recovery through rehabilitation programs.

The primary responsibility for disaster relief rests with the affected government. OFDA responds only when the affected population and responsible host agencies are unable to cope with the problem. OFDA's assistance supplements, supports, and is coordinated with that of the affected government.

It is the responsibility of the U.S. Chief of Mission to insure that the U.S. Government's assistance is based on priority humanitarian needs and is coordinated with the activities of the affected government and other donors.

To ensure that response is appropriate, timely, and cost effective, OFDA provides technical assistance in damage and needs assessments.

The relief which OFDA furnishes may take the form of commodities, services, transportation, monetary donations and, if necessary, on-the-ground relief, through the deployment of an Assessment Team or a Disaster Assistance Response Team.

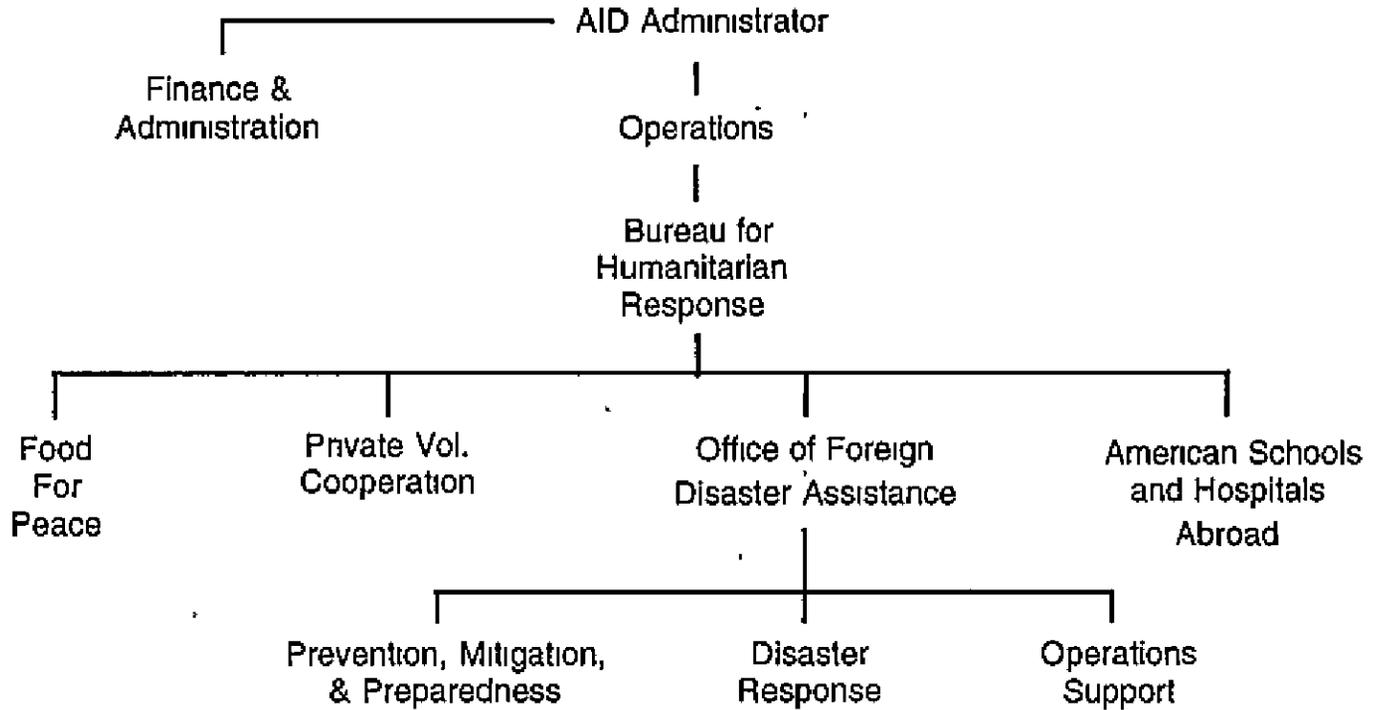
OFDA views disaster relief provided to victims in the immediate aftermath of a disaster in the context of long-term development activities. Disasters can provide the opportunity to reduce the vulnerability of the affected community to future disasters. Rehabilitation and reconstruction, properly formulated, can do much to introduce mitigation techniques to protect against the effects of future disasters.

OFDA stands ready to continue the American tradition of concern and humanitarian assistance for disaster victims worldwide.





# U.S. Agency for International Development



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# **Chapter I**

## **General Responsibilities**

## General Responsibilities

This chapter provides information on general responsibilities for individuals sent to disaster sites to perform assessments or to participate as members of a DART.

### Individual Team Member Checklist

Team members should be as individually mobile as possible. Unless you are deploying as a member of a long-term DART, try to limit your personal belongings to what you can carry

#### Personal Items:

- Valid passport.
- Immunization record (Yellow Book).
- Personal health items (see below).
- Adequate amount of U S currency/traveler's checks (check to see if you will be able to cash them) for length of assignment
- Personal checks and major credit cards.
- Food for 36 hours (in case none is initially available).
- Drinking water for 36 hours (in case none is available).
- Four changes of clothing appropriate for the location, elevation, time of year, and kind of assignment.
- Toilet articles
- Six extra passport photos
- Flashlight with spare batteries.
- Alarm clock.
- Pocket knife.
- Ear plugs.

#### Optional Items: (Brought at your own risk)

- Camera with film, batteries.
- Pocket size binoculars.
- Electrical adapters for appliances.
- Pocket calculator.
- Swapping items (pins, buttons, pencils, stickers, etc.)

#### Personal Health Items and Medical Tips:

- Prescription medicine for expected length of stay
- Medication for colds, allergies, diarrhea, athlete's foot, menstrual cramps, hemorrhoids, constipation, and headaches.
- Sunscreen (15 or higher).
- Insect repellent

- Antiseptic ointment.
- Lip salve.
- Vitamins.
- Small scissors.
- Tweezers.
- Soap.
- Small bottle or individual swabs of isopropyl alcohol.
- Water purification tablets or system.
- Baseball cap or hat for sun and rain
- Flip flops.
- Extra pair of glasses/contacts, and record your prescription in the back of your "Yellow Book "
- If you wear contacts, be aware of dusty conditions at disaster sites.
- Write down your blood type in your "Yellow Book."
- Don't take any of these first aid kit items in glass bottles.
- Make a copy of your "Yellow Book" and keep the copy separate, in case you lose the original.

**OFDA Provided:**

- DART Field Operations Guide for Disaster Assessment and Response (FOG).*
- Individual's office supplies.
- Position description and checklist pertaining to your assignment.
- Visa and country clearances for affected country (if required).
- Personal drug kit (if needed).
- Short-term immunizations, boosters, and malaria pills needed at time of departure (contractors check when negotiating contract).
- Travel authorization (TA) (make extra copy), travel advance, and airline tickets if travel is under OFDA. Make sure TA covers your potential needs such as car rental, local ticket purchase, excess baggage, and double per diem.
- OFDA Individual Support Kit (if needed).\*
- Overseas workmen's compensation and medevac insurance (contractors only).

**Information to be left with OFDA:**

- Personal information sheet for personal and family emergencies.

\* Note: DART members will usually be issued an Individual Support Kit by the OFDA logistics officer if requested. The contents of the kit are listed in the "Reference Information" chapter of the FOG.

## Team Support Checklist

This checklist addresses overall team needs and complements the personal items list and the position checklists. The team leader ensures that the following team support items are acquired prior to deployment.

- Contact list for USAID/Embassy, private volunteer organizations (PVO's), nongovernmental organizations (NGO's), international organizations (IO's), United Nations (U.N.), donor and assisting countries, and appropriate affected country officials
- DART *Field Operations Guide (FOG)*
- AID decals.
- Team first aid kit.
- Camera and film/VCR tapes (35mm and television camcorder) for documenting events and DART response. (optional)
- Communications equipment commensurate with the assignment.
- Copies of reference documents pertaining to affected country (if available):
  - OFDA's Country Profile.
  - State Department background notes.
  - Department of Defense (EMC) document
  - Mission Disaster Relief Plan (if available).
  - Lessons learned file.
  - Maps covering the affected and surrounding areas
  - OFDA's Disaster History and Commodity Services Report.
  - Travel advisory alerts.
  - Public Health bulletins.
  - List of do's and don'ts
  - Assessment guides.
- Copy of all cable traffic pertaining to the disaster.
- Copy of all directives and team support documents:
  - OFDA's team support funding documents
  - Overseas workmen's compensation and medevac insurance for contractors
  - Travel orders and itineraries.
  - Special authorizations and instructions from OFDA Director.
  - Photocopy of passports, visa, and personal information sheet.
- Administrative kit including:
  - Laptop computer with software and accessories to allow faxing info through satellite communications system
  - Portable computer printer with ink cartridge.
  - Paper, notebooks and pens, pencils, etc.

- [ ] Dry marker felt pens (assorted colors).
- [ ] Masking and strapping tape.
- [ ] Spare computer paper (9 by 11 inches and 11 by 14 inches).
- [ ] Spare supply of appropriate forms

## **Working with the Media**

The team leader sets the guidelines for relations with the media covering the disaster. If a press officer is a member of the DART, he/she is the contact point with the media. If not, the team leader takes on the direct media relations function. The following rules are mainly for press officers. However, these rules are helpful to any member of the team who may become involved with answering media needs

### **A. Rules for Dealing with Reporters**

1. Never pick a fight with the news media.
  - They air or print every day and you don't.
2. There are no secrets.
  - Assume what you say and do will get on the air and/or the printed page.
  - While you can say things "off the record," that doesn't mean that they won't print it and give you attribution.
3. Don't assume anything.
  - Reporters may not be well-informed or technically proficient about your profession.
  - Explain terms to ensure they are understood.
4. Keep it simple
  - Simplify and summarize your major points
  - Write facts and data down to hand out
  - Use English. Talk in a relaxed style that is aimed at lay persons, not subject experts. Avoid acronyms.
  - Remember that the audience is the general public.
5. Give reporters a good story to write. or they may find one you don't like and write it.
  - Listen to trends in the questions. Is the reporter asking leading questions? Are there obvious misconceptions? Offer to clarify or redirect.
6. Treat reporters professionally
  - Treat them with respect
  - Initiate background conversations.

- Always answer their calls immediately
  - Leave word in your office where you will be so you can answer calls immediately
7. Don't lie.
    - Make sure your information is accurate.
    - It doesn't have to be all-encompassing. You don't have to tell a reporter your views on everything.
  8. Before you do an interview, decide what you can discuss and what you can't—stick to it.
  9. Use humor to defuse confrontational situations
  10. Choose your words carefully and well
    - They will likely be reported as you say them
  11. If a critical or controversial story is going to be written anyway, your point of view should be in the story.
    - Silence is not always golden.
  12. Repetition is the essence of retention.
    - The public will remember what they see, hear, and read repeatedly in the media.
  13. Once a story is out that you don't like, it is usually too late and fruitless to correct it.
  14. Use objective and authoritative sources of information to back up your statements to reporters, if you can.
    - Don't make charges you can't back up or make stick.
  15. Try to anticipate questions. If you can't or you don't know the answer, get back to the reporter after you are asked such questions so you can give a considered response.

## Documentation

**General**—Team members are responsible for maintaining a **Daily LOG** of activities with which they are involved. This **LOG** should include a chronology of significant events (departures, arrivals, meetings attended, individuals contacted, work accomplished, etc.) The **LOG** should be turned in to supervisors on request. The **LOG** is turned in to the Plans function where it becomes a part of the disaster response documentation.

Each function receives and develops information that becomes a part of the disaster documentation. The following is a list of the types of documentation generated by each DART function:

**Command**—Delegation of authority, disaster relief objectives, press releases, safety plans, liaison plans

**Plans**—Situation reports, disaster chronology (developed from individual logs and information gathered by Plans), maps, assessments, daily plans, personnel tracking.

**Logistics**—Equipment and commodities tracking, accountability documents, equipment use information.

**Operations**—Work assignments, work accomplishments, assessments, maps.

**Administration**—Fiscal accounting, rental and procurement agreements, receipts

## **Accountability and Liability**

**General**—Team members are responsible for three types of equipment and supplies at a disaster: expendable, non-expendable, and personal.

**Expendable**—Those items that are issued for use at a disaster site and are either used up, consumed, or possibly left at the disaster site for use by local individuals involved in continuing disaster relief efforts. Expendable items would include items such as gloves, small water containers, flashlights, batteries, hardhats, hand tools, and saw blades. When issuing expendable items to local relief workers, be sure that the items are needed for the immediate relief effort. Some expendable items have proven to be personally attractive and particularly susceptible to being used for other than relief activity purposes.

**Non-expendable**—Those items that are issued for use at a disaster and can be returned and refurbished for use on future assignments. Non-expendable items would include items such as radios, generators, specialized tools, and computers.

**Personal**—Those items such as clothing, toiletries, extra glasses, and medications that an individual takes to a disaster to attend to his/her personal needs. Cameras, binoculars, radios, and such items are considered personal items unless specifically required by OFDA. OFDA will accept no liability for the loss, damage, or destruction of personal items

**Accountability**—Accountability for funds, or relief supplies, materials and equipment provided by OFDA rests primarily with the recipient U.S. mission in the affected country. If OFDA deploys a DART or an assessment team to assist the mission in the affected country, OFDA will become accountable at the field level for the distribution of all funds, supplies, equipment, and commodities used in disaster relief operations. Team members have the responsibility to account for all items that they consume, use, damage, destroy, or lose. This accounting must be done through a documentation system that tracks items from receipt through use and/or subsequent issuing onto the ultimate users or victims. Team members should always receive and keep an inventory of items for which they are responsible. Supervisors are responsible for identifying the method and level of tracking necessary for each disaster, based on direction from the team leader. Lost or damaged items must be accounted for with a written statement explaining the circumstances. When a question arises over whether an item is expendable, the team functional supervisor is responsible for making the decision. Certain disaster situations may call for issuing non-expendable items to local agencies for use beyond the deployment of the team. Such issues should be documented through a hand receipt, with accompanying written justification becoming part of the team documentation. The team leader has the final team authority to decide what will or will not be left.

**Liability**—Team members are liable for items lost or destroyed through poor accounting or performance. Problems arising from poor accounting or performance will be resolved with the appropriate representatives of the member's parent agency. Applicable USAID regulations will be used during the resolution.

## **Safety**

Being aware of personal and team safety is a part of every OFDA disaster relief worker's job, regardless of his/her task at the disaster. The goal is to prevent accidents and protect the safety and health of all disaster workers on and off the job. Only if each disaster worker becomes familiar with the hazards of the job and takes the necessary steps to protect him/herself and the other members of the team, will the team maximize its potential. Some major points to remember are:

1. Report all injuries and accidents to your supervisor and the safety officer (if a team member).
2. Wear personal protective equipment when required.

- 3 Report hazardous conditions and other safety concerns to your supervisor and the safety function immediately.
4. Familiarize yourself with the medical emergency plan and/or a medevac plan, if one has been done
- 5 Be aware of potential hazards at a disaster site, such as working in or near damaged buildings, aircraft operations, vehicle operations, and unsanitary living and eating conditions

OFDA disaster relief workers are sent to a disaster because of an emergency situation. The tasks they perform are ones for which they are trained. An emergency occurs for a relief worker and the team when a worker becomes sick or injured and must be cared for or evacuated, diminishing the effectiveness of the team to deliver the maximum assistance possible to the victims. The safety and well-being of all members is an asset to the team and the victims. **THINK SAFETY AT ALL TIMES!!!**

## **Administration**

### **A. Time Records**

Depending on the relationship with OFDA, team members may or may not need to keep track of hours worked by them during a deployment to a disaster. OFDA will determine what method of time-keeping is necessary. If there will be reimbursement for all or a portion of a person's time, the team member must make sure that he/she and his/her agency are clear on what method of reimbursement will be used by OFDA. Types of agreements under which team members may be serving OFDA are:

**USAID-Direct Hire**—See *AID Handbook 26*.

**Personal Services Contractor**—Reimbursement and reporting documentation determined by contract. Check with OFDA at time of contract issuance

**RSSA**—Includes individuals whose salaries are reimbursed through a resources support services agreement (RSSA). Some agencies donate employee salaries up to 6 weeks. The method of reimbursement for overtime worked must be agreed to beforehand by OFDA. If overtime will be approved, claims for reimbursement must be accompanied by a time record signed by the senior OFDA/USAID person on the team. Compensation time for overtime worked is an issue that must be determined by the individual's parent agency.

**Individual Working for a Contractor, Grantee or an Organization with a Memorandum of Understanding (MOU) with OFDA (may include volunteers)—Reimbursement and reporting documentation determined by contract, grant, or MOU. Parent agencies must determine the required documentation.**

## **B. Per Diem and Vouchers**

Current GSA per diem rates and normal per diem rules will be used by all team members to determine amounts to be reimbursed for expenses incurred during a team deployment, unless otherwise specified in a contract, grant, or MOU.

Team members will fill out travel vouchers with the agency that prepares their travel authorization. Depending on the urgency of the team mobilization, a team member may travel on one or more travel authorizations, such as one for airline tickets, another for food and lodging, and/or possibly a third for a travel advance. Make sure that the agency issuing a travel authorization has a mechanism and authorization procedure in place for reimbursement from OFDA.

Team members must keep receipts for lodging that they have paid for. If a team member will be reimbursed based on actual expenses, he/she must obtain receipts for all expenses. Team members should keep a daily log of activities as well as expenses. The log is very helpful when filling out travel voucher(s). Remember, only those expenses authorized on a travel authorization can be reimbursed.

## **C. Procurement and Contracting**

The hiring or contracting of goods and services at a disaster is the responsibility of the team leader. The team leader may delegate this responsibility to an authorized person on the team, depending on the size and complexity of the disaster. Unless authorized, team members cannot purchase, hire, contract for goods and services, or make informal commitments to do so. If a team member has any questions as to the limits of his/her procurement or contract authority, he/she should contact his/her team supervisor.

# **Chapter II**

## **Assessments**

# Assessments

## Introduction

The purpose of this chapter is to provide OFDA staff and others who participate on OFDA Assessment Teams with a guide to conducting an *initial assessment* for sudden or slow onset disasters. It includes information on the purpose, types, and elements of an assessment: collecting and analyzing data, preparing recommendations for U.S. Government response; and submitting assessment reports to OFDA Washington (OFDA/W). It also provides assessment checklists and reference information by sector and reference annexes for displaced populations at risk.

In addition to providing a guide to conducting an initial assessment, this chapter contains information on assessing specific sectoral needs. However, it is not intended as a complete reference for comprehensive assessments conducted by sectoral experts. When sectoral experts such as epidemiologists and sanitarians are members of the Assessment Team, they will provide more specific materials related to conducting their portion of the assessment. This information will help when team members assist in conducting comprehensive assessments.

The information in this chapter is also designed to assist members of OFDA Assessment Teams to understand terms and concepts and evaluate the design, quality, and accuracy of assessments conducted by other specialists, organizations, and governments. Their information may be incorporated into an Assessment Team's report and be used for developing the team's recommendations.

### A. Purpose of an Initial Assessment

The overall purpose of an initial assessment is to provide OFDA/W with information and recommendations to make timely decisions on the U.S. Government disaster response. Initial assessments:

- Identify the impact which a disaster has had on a society, and the ability of that society to cope
- Identify the most vulnerable populations that need to be targeted for assistance
- Identify the most urgent food and non-food requirements and potential methods of providing them most effectively.

- Identify the level of response by the affected country and its internal capacities to cope with the situation.
- Identify the level of response from other donor countries and PVO's/NGO's/IO's
- Make recommendations which define and prioritize the actions and resources needed for immediate response, to OFDA/W and to USAID/Embassy (if there). Recommendations should include possibilities for facilitating and expediting recovery and development
- Identify which types of in-depth assessments should be undertaken.
- Highlight special concerns which would not immediately be evident to OFDA/W or non-emergency persons.

Initial assessments should also provide baseline data as a reference for further monitoring. Monitoring systems should be identified so that relief officials will be able to determine whether a situation is improving or deteriorating. The systems must also be able to provide a means of measuring the effectiveness of relief activities. Each assessment or survey should be designed to build upon previous surveys and expand the data base.

Assessments should be conducted whenever there is uncertainty about the nature of an emergency response. If the disaster appears to require more than a \$25,000 request, an assessment should be considered.

The Assessment Team must be sensitive to the situation of the affected country. The team needs to structure their assessment questions so that expectations are not created. It should be clear to the affected country what the United States can/cannot and will/will not do. The Assessment Team must also be aware of the pressures they will feel from the affected country and others to "identify needs." A recommendation of "no additional assistance is required" may also be a valid response, given that the on-the-ground site visit yields a disaster that is not as severe as indicated in third-hand reports and media coverage (focused on the most heart-wrenching cases) received in Washington prior to the Assessment Team's departure.

It is important to remember that the Assessment Team is supporting the U.S. Country Team led by the Ambassador. The Country Team will have a strong desire to help. The Assessment Team must consider their desire to help, but it also must be prepared to advise them on the limitations of OFDA, and that the United States cannot solve all the disaster problems alone.

OFDA Assessment Team findings and recommendations must be clear because they become the blueprints for U.S. Government decision-making and planning for the disaster response. Precise assessments are the foundation of what OFDA does.

## **B. Types of Assessments**

Assessment Teams collect two types of information: what has happened as a result of the disaster and what is needed. The type of information that is usually available first to an Assessment Team concerns the effects of the disaster. Collecting this information is referred to as a *situation or disaster assessment*. It identifies the magnitude and extent of the disaster and its effects on the society. The other information gathered is a *needs assessment*. It defines the level and type of assistance required for the affected population. The gathering of information for the situation assessment and needs assessment can be done concurrently. The information collected in the initial assessment is the basis for determining the type and amount of relief needed during the immediate response phase of the disaster. It may also identify the need for continued monitoring and re-assessing of the unfolding disaster.

### **1. Situation (Disaster) Assessment**

This assessment gathers information on the magnitude of the disaster and the extent of its impact on both the population and the infrastructure of the society.

Areas assessed and reported on include:

- Area affected by the disaster (location and size).
- Number affected by the disaster.
- Mortality and morbidity rates.
- Types of injuries and illnesses.
- Characteristics and condition of the affected population.
- Emergency medical, health, nutritional, water, and sanitation situation.
- Level of continuing or emerging threats (natural/human-caused).
- Damage to infrastructure and critical facilities.
- Damage to homes and commercial buildings.
- Damage to agriculture and food supply system.
- Damage to economic resources and social patterns.
- Level of response by the affected country and internal capacities to cope with the situation.
- Level of response from other donor countries and PVO's/ NGO's/IO's.

## 2. Needs Assessment

The initial needs assessment identifies resources and services for immediate emergency measures to save and sustain the lives of the affected population. It is conducted at the site of a disaster or at the location of a displaced population. A quick response based on this information should help reduce excessive death rates and stabilize the nutritional, health, and living conditions among the population at risk. A quick response to urgent needs must never be delayed because a comprehensive assessment has not yet been completed.

### C. Assessment Team Composition

An ideal OFDA Assessment Team is comprised of three or four people specializing in health, nutrition, water and sanitation, logistics, communications, disaster management, and OFDA policies and procedures. OFDA draws experts from within OFDA and USAID, other federal agencies, contractors with disaster management experience, bilateral aid agencies, and the PVO/NGO/IO community.

The Assessment Team is led by a team leader usually selected from within OFDA or USAID. Team leaders are familiar with OFDA's mandate and response capabilities. The scope of work for the team is defined by OFDA management and the USAID/Embassy within the affected country.

### D. Elements of an Assessment

The following information defines the elements of any assessment. Assessments are generally comprised of six basic elements or activities:

**Preparedness Planning:** An accurate assessment depends on thorough planning, design, and preparation. Most information needs can be identified well in advance. The means of collecting the necessary data and the selection of formats for collection and presentation of the information should be established as part of an organization's pre-disaster planning. Seek advice widely from survey specialists, statisticians, and epidemiologists. By preparing to undertake assessments well in advance of an emergency, both the data required and the process most appropriate for its accurate and speedy collection can be identified and refined prior to the emergency. Proper design of sampling and survey methods can increase substantially the

accuracy and usefulness of assessment data. Standard survey techniques, questionnaires, checklists, and procedures should be prepared to ensure that all areas are examined and that the information is reported using standard terminology and classifications. Also, consideration of local cultural and other social factors at this stage can help greatly in formulating interview methods and identifying useful sources of information.

**Survey and Data Collection:** Information gathering must proceed rapidly and thoroughly. In an initial reconnaissance, surveyors should look for *patterns and indicators* of potential problems. Using the procedures developed earlier, key problem areas are thoroughly checked. Sources of all information should be identified. Examples include whether it was observed, reported by an informant in a discussion, collected through a survey of a randomly sampled population, or heard by rumor. The information will be more meaningful to those interpreting it, especially with conflicting reports, if a source is indicated.

**Interpretation:** Thorough analysis of the information gathered is critical. Those performing the analysis must be trained to detect and recognize trends and indicators of problems, to interpret the information, and to link the information to action programs.

**Forecasting:** Using the data that has been collected, the Assessment Team must construct estimates about how the situation might develop in the future so that contingency plans can be drawn up. Forecasting requires input from many specialists, especially persons who have had extensive experience in previous emergencies and who might be able to detect trends and provide insights as to what course an emergency might follow.

**Reporting:** When data analysis and forecasting are complete, it is necessary to report and disseminate the results in a format that enables managers to make decisions and formulate plans and projects. Essential information should be presented and structured so that the main patterns and trends are clear.

**Monitoring** An assessment should not be seen as an end result in itself, but rather as one part of a continuing process of re-evaluating the needs and the appropriateness of responses to the disaster situation. This is particularly true in long-term complex disasters.

## **E. Data Collection Methods**

It is useful to distinguish between the terms “data” and “information”: data is simply a collection of words, numbers, and other characters with a structure. Information is “useful data”. Data becomes information when it is useful, meaningful, relevant, and understandable to particular people at particular times and places, for particular purposes. What is information to one person can simply be useless data to another. Three other considerations are important in assessment data collection:

**The Need for Accuracy** The information must agree with the reality it represents. The data on which it is based must be accurate.

**The Need for Timeliness and Adequate Frequency:** Information must be produced as and when it is wanted. The frequency of data collection and reporting must match the rate of change in the situation being assessed.

**The Question of Availability of and Access to Information:** Who should get what information? The way in which data is collected or the access to the data can affect the way it is routed, who it reaches, and where its flow may be blocked

There are several data collection methods. This list outlines some of the most common ways of collecting data in emergencies.

1. **Automatic initial self-assessment and local assessment by key elements in the system, e.g., staff of “lifeline” systems.** This can involve pre-planned damage reporting by civil authorities, and by military units.
2. **Visual inspection and interviews by specialists** Methods can include overflight, actions by special point-assessment teams (including pre-planned visits), and sample surveys to achieve rapid appraisal of area damage.
3. **Sample surveying of specific characteristics of affected populations by specialist teams.** Well-conducted surveys have a number of advantages, not least being the relative confidence that may be attached to data collected using formal statistical sampling methods. There are several different types of sample surveys:

- Simple random sampling: one in which every member of the target population is equally likely to be selected, and where the selection of a particular member of the target population has no effect on the other selections.
  - Systematic random sampling: for example, choosing every fifth, or tenth member on a numbered list (may be wildly inaccurate if the lists are structured in certain ways).
  - Stratified random sampling: divide the population into categories (or strata); then select members from each category by simple or systematic random sampling; finally combine these to give an overall sample.
  - Cluster sampling this restricts the sample to a limited number of geographical areas, known as "clusters" For each of the geographical areas chosen, select a sample by simple or random sampling, then combine these sub-samples to get an overall sample
4. "Sentinel" surveillance. This is a method used widely in emergency health monitoring, where professional staff establish a reporting system that detects early signs of particular problems at specific sites. The method can be applied to a variety of other problems where early warning is particularly important.
  5. Detailed critical sector assessments by specialist. This involves technical inspections and assessments by experts It is particularly required in sectors such as health and nutrition, food, water supply, electric power, and other infrastructure systems. Critical sector assessments may be compiled from reports by specialists in these systems or from outside specialist teams.
  6. Continuing surveillance by regular "polling" visits This again is a technique which is well-developed in epidemiological surveillance of casualty care requirements and emergent health problems.
  7. Continuing surveillance by routine reporting. As the situation develops, it will be especially useful if routine reporting systems can be adapted and used to develop a comprehensive picture of events.

8. Interviews with key informants in government and PVO's/ NGO's/IO's and within particular groups of affected people, local officials, local community leaders and (especially in food and displacement emergencies) with leaders of groups of displaced people.

## **F. The Keys To a Successful Assessment**

Several factors contribute to the design of a successful and accurate assessment:

**Identify the Users:** Every element of an assessment should be designed to collect information for a specific user. The potential users should specify their data needs during the design phase. For example, health workers need certain types of information that will only be useful in certain formats, usually tables, while a procurement officer may need more quantitative or statistical data.

**Identify the Information Needed to Plan Specific Programs:** Too often, assessments collect information that is incomplete or of little value for planning relief programs or specific interventions. In many cases, information is anecdotal rather than substantive; in others, valuable time is wasted collecting detailed information when representative data would be just as useful. Determine what information is vital, what method is best to obtain this information, and how much detail is necessary for the information to be useful. The type of assistance usually provided by an agency should be considered when listing the data to be collected. For example, an agency that provides food will need to know about availability of transport and fuel, and road conditions

**Consider the Format:** It is important to collect, organize, and present the data in a form useful to analysts and program planners. The results must be presented in a format that makes the implications very clear so that priorities can be set quickly. By applying baselines and standards to the presentation, key relationships can be quickly noted. For example, daily death rates in a displaced persons camp should be calculated and compared to the international standard of 1.0 deaths per 10,000 per day.

**Consider the Timing of the Assessment:** Timing may affect the accuracy of an assessment since situations and needs can change dramatically from day to day. Various types of assessments need to be timed to collect the necessary information when it is available and most useful. Relief needs are always relative

but as a general rule, initial surveys should be broad in scope and should determine overall patterns and trends. More detailed information can wait until emergency operations are well established.

**Determine the Best Places to Obtain Accurate Information:** If the information must be obtained from sample surveys, it is important that the areas to be surveyed provide an accurate picture of needs and priorities. For example, carrying out a health survey in a medical center would yield a distorted view of the overall health situation, since only sick or severely malnourished people would be in the center.

**Distinguish Between Emergency and Chronic Needs.** Virtually all developing countries have long-standing chronic needs in most, if not all, sectors. It is important to design an assessment that will distinguish between chronic and emergency needs. Attempt to acquire baseline data, reference data, and/or recognized and accepted standards in each sector. For example, if malnutrition is prevalent in a certain area of a country, a nutrition survey of incoming displaced persons will almost certainly reflect poor nutritional status. The surveyors must differentiate between what is normal for the location and what is occurring as a result of the disaster, so that emergency food aid and health care can be provided to those most in need. (It should be remembered that assessments may bring to light previously unrecognized or unacknowledged problems in a society. Thus, the data collection system should be careful to structure the information so that critical data such as health status and such, can be used for long-term planning.)

**Use Recognized Terminology, Standards, and Procedures:** Assessments will invariably be carried out by a variety of people operating independently. To provide a basis for evaluating the information, generally-accepted terminology, ratings, and classifications should be used in classifying and reporting. Use of standard survey forms with clear guidelines for descriptive terms is usually the best way to ensure that all information is reported on a uniform basis.

#### **G. Assessment Process Main Points**

- An assessment is only a "snapshot in time."
- Information changes over time.
- The significance of information changes over time.

- If a disaster manager can identify the unfolding scenarios, monitoring will ultimately be more important than assessment.
- What you can't see is often more important than what you can see.
- It is vital to use the first assessment to establish an ongoing data collection and analysis system.
- Most reports should be iterative, not detailed.
- The initial assessment should provide information that feeds directly into the program planning process.
- Timing of the report is vital. Without a point of reference, most assessment data is of little value

## **H. Assessment Recommendations and Their Impact on Recovery**

It is important that the recommendations made by the Assessment Team do not have a detrimental effect on the long-term recovery efforts of an affected country. Relief programs can set the stage for rapid recovery or prolong the length of the recovery period. Every action in an emergency response will have a direct effect on the manner and cost of reconstruction

Many common relief programs can create dependencies and severely reduce the survivors' ability to cope with the next disaster. For example, food commodities brought into a disaster area without consideration for the local agricultural system can destroy the local market system and cause future food shortages where self-sufficiency had been the norm. Another example is when relief supplies, equipment, or technology are sent in that are not sustainable by the survivors. When this assistance wears out or is used up, the survivors may be left in the same condition as immediately following the disaster.

Recommendations should be simple, support the use of local materials and systems, and be sustainable by the affected country. Don't discount alternative interventions that may be against "conventional wisdom", collide with bureaucratic obstacles, or need increased relief agency capacity. In the long run they may be more cost effective and sustainable

## OFDA Assessment Cable Reporting Formats

The following cable format outlines should be used by OFDA Assessment Teams when sending reporting cables to OFDA/W following a disaster assessment. A longer, more detailed assessment report may be prepared by the team to address the points outlined in the cable in more depth.

### A. Slow Onset Disaster Cable Format

**Subject:** Country—Type of disaster

#### References

Cite any recent cables that are relevant to the report (as appropriate). This is an **action** cable for OFDA (or other office), see paras x,y,z (These paragraphs will most likely be at the end of the cable, although they can also be at the end of each technical section if the team prefers. A summary of the recommendations should be in the summary section of the cable.)

#### Summary

This section of the cable can be more than one paragraph and should summarize the findings of the disaster assessment.

Describe the disaster. How many people are affected? Where are they? (For example, "a famine of horrifying proportions is developing in x as a result of civil unrest and drought. An estimated y people are affected and will require food for z months.")

Summarize what is currently being done to handle the disaster, on the local, national, and international level. (Mention the presence of relief agencies both local and international, military participation, etc.)

What is the Mission/Embassy doing (briefly)? Has a disaster been declared? What are the team's summary recommendations?

#### General Situation

This introductory section should give the reader a more detailed overview of the disaster than the summary.

Describe the OFDA Assessment Team Who was on it? What was their expertise? Where did they go? How did they get there? How long did they stay? Who did they talk/meet with? Has the Embassy declared a disaster? When? Has the USD 25,000 been received? Expended? For whom/what?

Describe in more detail the disaster situation.

(a) What is the extent/enormity of the problem? When did the problem begin? What is the experience of the country in previous similar situations? (b) Where is the disaster occurring? How many people are affected? How many have died/are injured/homeless/ill/ displaced? If displaced, are they in camps, how many people are in them? What is the population profile (children/men/women/ages)? Are more on the move? Are they moving within the country or is there a potential refugee situation evolving? (c) How is the local government/international community responding? (d) Are there particular political/social/economic/security factors that influence the event?

### **Food and Logistics**

If it is a famine or food shortage, describe the magnitude of the food needs, numbers of people, tonnages required, tonnages pledged to date. (For example, "The U.N. estimates that x metric tons of food are required in the next 6 months to avoid massive starvation. This comes to y metric tons per week ")

Describe the logistics of getting the food to the people, roads, water, air, relative costs, truck and worker availability, and any problems encountered (customs, contracts, etc.), including problems at ports and airports. In a conflict situation note in particular any security problems associated with food movement.

What is being done? Who is distributing? How? Where? What problems have been encountered? Mention should be made of availability of food in markets, prices, potential for a market sales program or other ways of getting food to people, such as food for work.

What kind of rehabilitation programs, if any, are underway (i.e. seeds and tools, fishing equipment)? Who is implementing the programs? Where?

Are there any security issues related to food distributions?

What more needs to be done? Further assessments? More pledges? Different foods? More funds?

## **Health**

Describe nutritional conditions. What is the rate of malnutrition? Has it changed (improved/declined, in what areas/what groups? Be as specific as possible). Cite sources (i.e., "MSF/F surveys conducted in (month) have determined that rates of malnutrition of the under-5 population in x are y. Similar surveys in other areas report the same/different information.)

Describe mortality. What is the death rate? Where?

Describe morbidity. What are the health effects of the disaster? Are there/have there been any epidemics?

Describe what is being done to handle the situation. Who is on the ground? Where? Doing what (therapeutic feeding/immunizations/health clinics)? With what staff (doctors/nurses, local, international)? How are they getting to the area (by road/air/boat)? Are they staying overnight/traveling in by day only? Is there one organization taking the lead? What is the U.N. doing? What role is the host government playing (if relevant)?

Are there any security issues related to these programs?

## **Water and Sanitation**

Describe where the population obtains water (wells/boreholes/temporary facilities/piped city system)? Are there water problems associated with the disaster? If in a camp, note color of water (clear/muddy/yellow/red/green on surface) and smell.

What is being done about the problem? Is the water being treated? How much water is available to people per day (liters/person/day)? Where are they getting it? Who is providing it? Is there a clean water education campaign?

Describe sanitation problems: Is there overcrowding? If so, how is waste being handled? Is there damage to the sewerage system as a result of the disaster?

Are there qualified people available to advise/assist? Is technical assistance needed?

## **Shelter**

Shelter is not likely to be a major problem in a slow onset disaster unless there is massive displacement of people, in which case the team should evaluate shelter needs at the camp or area where the displaced persons (DP's) have gathered

Describe the need for shelter, clothing, and eventually cooking supplies, water jugs. Where are the DP's living? In abandoned buildings, under trees, in makeshift huts? Are there building materials nearby? Do they have clothing (in a civil war situation, very frequently DP's will arrive without clothing or household goods)?

Describe what is being done. Who is in charge? What is the role of local government, U.N., relief agencies?

What additional needs must be addressed?

### **Capacity**

As best as possible, evaluate the overall response to the disaster; the capability of the NGO's, both national and international collaborative efforts between them and problems you identified; the capacity of the host government; its policies, biases, and interests in assisting or not.

### **Coordination**

How is the relief effort being coordinated? Who is taking the lead? Are there donors' meetings or meetings with government officials? With NGO's? Where are they held and how frequently? Did the team attend any of them? What role has the Mission/Embassy been playing?

What more needs to be done?

### **Recommendations**

Outline immediate actions required (be sure to put paragraph numbers in paragraph 1 of the cable). If commodities are requested, specify the item, quantity needed, other specifications as appropriate, when it is needed, how it will be received, transported, stored, and distributed. If by air, information should be provided about runway capability (dirt/paved, damaged/intact), air traffic control services, possible security problems as appropriate. If additional expertise is needed, specify type and when. Note any issues such as customs clearances, storage, special handling, and any holidays that may interrupt delivery. Recommendations in a slow onset disaster can also include making additional funds available to respond to project proposals, additional assessments by CDC, or mobilizing a DART.

## **Who Should Get the Cable?**

The reporting cable should be addressed at a minimum as follows.

SECSTATE WASHDC (for BHR/OFDA, Regional Bureau, and BHR/FFP also for the State Desk and RP); INFO AMEMBASSY BRUSSELS (for USEC); AMEMBASSY ROME (Rome pass FODAG), USMISSION GENEVA (for AID and RMA); USMISSION USUN NEW YORK; AMEMBASSY ADDIS ABABA (for OFDA Regional Advisor - if in Africa, ME, or Europe), AMEMBASSY SAN JOSE (for OFDA Regional Advisor - if in S/L.A ), AMEMBASSY MANILA (for OFDA Regional Advisor - if in Asia).

Additional INFO addressees will depend on the situation but could include (a) the neighboring country missions (i.e , if it is Sudan, send also to Kenya, Addis Ababa, Cairo at a minimum); (b) other European capitals with particular interests in the country (i.e , if it is in Iraq, send also to Paris, London, Bonn), (c) SECDEF WASHDC, (d) JOINT STAFF WASHDC; (e) USCINXXX - appropriate regional military addressee, or (f) others as situation requires.

## **B. Fast Onset Disaster Cable Format**

**Subject:** Country—type of disaster

**References:** Cite any recent cables that are relevant to the report (as appropriate). This is an action cable for OFDA (or other office), see paragraphs x,y,z (these paragraphs will most likely be at the end of the cable, although they can also be at the end of each technical section if the team prefers. A summary of the recommendations should be in the summary section of the cable).

### **Summary**

This section of the cable can be more than one paragraph and should summarize the findings of the initial disaster assessment

**Describe the disaster.** When did it occur, where, and approximately how many people were affected For example, "A typhoon of immense proportions hit the island of X, on Y date. An estimated Z people have been left homeless, agriculture destroyed, buildings damaged, .."

Describe in summary form what is currently being done to handle the disaster on the local, national, and international level. (Mention the presence of local and international relief agencies, military participation, etc.)

What is the Mission/Embassy doing (briefly)? Has a disaster been declared? What are the team's summary recommendations?

### **General Situation**

This introductory section should give the reader an overview of the disaster in more detail than the summary.

Describe the OFDA Assessment Team. Who was on it? What was their expertise? Where did they go? How did they get there? How long did they stay? Who did they talk/meet with? Has the Embassy declared a disaster? When? Has the USD 25,000 been received? Expended? For whom/what?

Describe the general situation.

(a) What is the extent of the disaster? Where did it occur? How many people were affected (killed/injured/homeless)? Were buildings damaged? How badly (cite percentage if available)? Were public services disrupted (water/electricity/transportation)? What is the general mood (panic/under control)? (b) Has there been a similar disaster in the country before or is this the first time? What has been the response by the affected country, donors, NGO's?

### **Health/Nutrition Situation**

This section should provide as much detail as possible on the health situation from as many sources as possible. Wherever possible, cite the source (i.e., "According to a Red Cross worker at the site...").

How many people have been killed, injured? Where are they? Are there potential disease risks? What are they? Who is affected (children/adults/the elderly)?

Describe what is being done in the health arena. What agencies (national and international) have mobilized? Where? What are they doing to address the issues in section 7? What are the constraints to doing a better job (e.g., too many victims and not enough staff, not enough of the right kind of staff, shortage of medical supplies, or problems of access)?

There are usually no immediate nutritional problems associated with a fast onset disaster. However, in certain cases, a food shortage could occur in the medium term if the disaster has destroyed or contaminated food supplies. What is the potential for a food crisis? What is being done about it? What are the constraints? Who is handling the issue?

### **Shelter**

Describe damage to private and public buildings in the affected area. What type of housing has been damaged/destroyed? How many buildings (private and public) have been damaged or destroyed? Has a value been placed on the damage?

Estimate population in need of shelter. Why is shelter important (weather, culture, etc.)?

What is being done to provide shelter? Are people at home? at camp sites? Are there any local solutions—what is the host government planning? Are imported supplies required? How much? Are any agencies responding? What more is needed?

### **Water/Sanitation**

Describe any water problems; for example, broken pipes, contamination, damaged pumping stations. Note color of water (clear/muddy/yellow/red/green on surface), and smell.

What is being done about the problem? Is the water being treated? How? Is there an education campaign? How much water is available to people per day (liters/person/day)? Where are they getting it? Who is providing it?

Describe sanitation problems. Is there overcrowding? If so, how is waste being handled? Is there damage to the sewerage system as a result of the disaster?

Are there qualified people available to advise/assist? Is TA needed? What was standard before the disaster?

Has the impacted population lost its supply of cooking, cleaning, and storage utensils? What is being done?

## **Infrastructure/Logistics**

Describe damage to infrastructure. Is this posing problems of access to victims? What is being done? What logistics support, equipment and facilities are available and undamaged (hospitals, airstrips, ports, aircraft, vehicles, etc )?

## **Coordination**

How is the relief effort being coordinated? Is the government in charge? Who is taking the lead? Are there donors' meetings and meetings with government officials? With NGO's? Where are they held and how frequently? Did the team attend any of them? What role has the Mission/Embassy been playing?

What more needs to be done?

## **Capability**

As best as possible, evaluate the overall response to the disaster; the capability of the NGO's; both national and international, collaborative efforts between them and problems you identified, the capacity of the host government; its policies, biases, and interests in assisting or not.

## **Recommendations**

Outline immediate actions required (be sure to put paragraph numbers in paragraph 1 of cable). If commodities are requested, specify the item, quantity needed, other specifications as appropriate, as well as when it is needed, how it will be received, transported, stored, and distributed. If by air, information should be provided about runway capability (dirt/paved, damaged/intact), air traffic control services, or possible security problems as appropriate. Note any issues such as customs clearances, storage, special handling, and any holidays that may interrupt delivery. If additional expertise is needed, specify type and when.

If shelter is requested, discuss ability of local authorities to receive, store, and distribute equitably. What NGO's would be involved? Is there the expertise to demonstrate uses of shelter? Is TA required?

## Who Should Get the Cable?

The reporting cable should be addressed at a minimum as follows

SECSTATE WASHDC, IMMEDIATE (for BHR/OFDA, Regional Bureau, and BHR/FFP also for the State Desk and RP); INFO AMEMBASSY BRUSSELS (for USEC); AMEMBASSY ROME (Rome pass FODAG); USMISSION GENEVA (for AID and RMA); USMISSION USUN NEW YORK; AMEMBASSY ADDIS ABABA (for OFDA Regional Advisor - if in Africa/ME or Europe), AMEMBASSY SAN JOSE (for OFDA Regional Advisor - if in S/L A ); AMEMBASSY MANILA (for OFDA Regional Advisor - if in Asia).

Additional INFO addressees will depend on the situation but could include. (a) the neighboring country missions (i.e , if it is Sudan, send also to Kenya, Addis Ababa, Cairo, at a minimum), (b) other European capitals with particular interests in the country (i.e., if it is in Iraq, send also to Paris, London, Bonn among others); (c) SECDEF WASHDC; (d) JOINT STAFF WASHDC; or (e) USCINCPAC - appropriate regional military addressee; or (f) for others as situation requires.

## Assessment Checklists

The following assessment checklists are intended to assist the Assessment Team in planning, formatting, and conducting a complete initial assessment. The answers to the checklist questions will provide the information needed to complete the disaster cable formats outlined in unit II of this chapter. These assessment checklists are divided into major sectoral areas. They are meant to be as inclusive as possible of the types of questions that need to be answered in initial assessments of various disasters. To be answered completely, some of the questions would require extensive survey work, which the team may or may not have the capacity to perform. However, the information may already exist, and the task of the team may be only to gather assessment information assembled by others and evaluate the information for accuracy, timeliness, and completeness. An Assessment Team may also find it necessary to develop new or expanded questions to gather the required information for specific disasters.

### A. Victims/Displaced Population Profile

- Determine the approximate number of displaced people.
- Determine their locations Are they moving? To where? How many?
- Determine how many are arriving per week. How many more could come?
- Determine how they are arriving Are they scattered individuals or families, clans, tribal, ethnic, or village groups, and by what means are they travelling? How did those already there arrive? What is the average family size?
- Determine the approximate numbers and ages of men, women, children (ages 0–5, 6–14, 15 and over).
- Identify ethnic/geographic origin (urban or rural):
  - Sedentary or nomadic background?
  - What is the average family/household size?
  - What are their customary skills?
  - What is the language(s) used?
  - What is the customary basic diet?
  - What is the customary shelter?
  - What are the customary sanitation practices?
- Determine how many there have been deaths in the past week
- Determine how many children under 5 died in the same period.
- Determine the main cause of death for each group.

- Determine the crude mortality rate.
- Determine whether measles vaccinations have been or will be provided. If provided, give dates of vaccinations.
- Determine percentage of children vaccinated.
- Incidence of diarrhea among adults and children
- Determine the most common diseases among children and adults.
- Determine what the displaced population has as personal property and what they lost as a result of the disaster
- Estimate the number and types of blankets needed (according to climatic conditions).
- Identify what blankets are available within the country from personal, commercial, PVO/NGO/IO, or government stocks
- Determine what is needed from external sources for blankets.
- Describe the clothing traditionally worn, by season and area.
- If clothing is needed, estimate the amount by age group and sex
- If clothing is needed, determine if used clothing is acceptable and if so, for which groups
- Describe normal heating/cooking practices.
- Determine whether heating equipment and/or fuel are required.
- Estimate types and quantities of heating equipment and fuel needed over a specific time period.
- Determine appropriate fuel storage and distribution mechanisms
- Identify what fuel is available locally.
- Identify what is needed from external sources.
- Determine if other personal effects, such as cooking utensils, soap, and small storage containers, are needed
- Determine if the DP's have brought any financial assets. Would those assets be convertible to local currency?
- Determine if livestock was brought along
- Determine if shelter materials were brought along
- Determine if other possessions, such as cars, bicycles, or boats were brought along.

## **B. Health and Nutrition**

### **1. Health**

- Ascertain demographic information.
  - Total number affected
  - Age-sex breakdown (under 5, 5–14, 15 and over)

- Identification of at-risk population (e.g., children under 5 years of age, pregnant and lactating women, disabled and wounded persons, and unaccompanied minor)
- Average family or household size.
- Rate of new arrivals and departures.
- Determine background health information:
  - Main health problems in home area.
  - Previous sources of health care (e.g., traditional healers).
  - Important health beliefs and traditions (e.g., food taboos during pregnancy)
  - Social structure (e.g., whether the displaced are grouped in their traditional villages and what type of social or political organization exists).
  - Strength and coverage of public health programs in home area (immunization).
- Mortality rate:
  - Determine the crude age-, sex-, and cause-specific mortality rates.
- Morbidity rate:
  - Determine the age- and sex-specific incidence rates of diseases that have public health importance (see Disease Annex at the end of this chapter). Document the method of diagnosis (clinical judgment, laboratory test, or rumors).
- Immunization programs:
  - Determine the need for immunization programs or the effectiveness and coverage (percent of children under 5, 5–14) of those in place, especially measles vaccinations
  - Dates of vaccinations.
  - Determine the capability of relief officials to begin or sustain a program (e.g., logistics infrastructure and cold chain availability).
- Determine or estimate number of major injuries and rate for each type of injury. Specify traumatic injuries requiring surgery or hospitalization (e.g., fractures, head injury, internal injuries).
- Determine number and locations of health facilities that existed prior to the disaster.
- Determine number of facilities that are still functioning and the total number of usable beds.
- Determine number of indigenous health personnel who are available.
- Determine amount and type of medical supplies and drugs that are available on-site or in country.
- Determine additional amount and type of medical supplies and drugs needed immediately from sources outside the stricken area.

- Determine what additional medical equipment is needed and can be readily obtained to deal with major injuries  
Suggested data sources:
  - National/provincial health officers.
  - Hospitals.
  - Clinics.
  - Traditional healers.
  - Local leaders.
  - Fly-over.
  - Walk-through surveys.
- Environmental conditions:
  - Determine climatic conditions.
  - Identify geographic features and influences.
  - Identify water sources.
  - Ascertain the local disease epidemiology.
  - Identify local disease vector.
  - Assess local availability of materials for shelter and fuel
  - Assess existing shelters and sanitation arrangements.
- Determine if a health information system is in place to monitor affected population and provide surveillance and intermittent population-based sample surveys which should.
  - Follow trends in the health status of the population and establish health care priorities.
  - Detect and respond to epidemics.
  - Evaluate program effectiveness and coverage.
  - Ensure that resources go to the areas of greatest need.
  - Evaluate the quality of care delivered.
- Determine if the affected country has in place or plans to begin programs in:
  - Health information system.
  - Diarrheal disease control.
  - Expanded programs on immunization (EPI).
  - Control of endemic diseases.
  - Nutrition programs.
  - Continuing education programs for health workers.
  - Vector control.

## 2. Nutrition

- Determine the prevalence of PEM in population less than 5 years of age.
- Ascertain prior nutritional status
- Determine prevalence of micronutrient deficiencies in the population less than 5 years of age (e.g., scurvy, anemia, pellagra).
- Determine percentage of children under 5 years of age with:
  - Either moderate or severe acute malnutrition.

- Either moderate or severe chronic malnutrition.
- Determine the average daily ration (food basket and calories/person/day) and method and intervals of distribution (e.g., wet/dry on a daily/weekly/monthly basis).
- Determine length of time this ration level has been available
- Determine the attendance and effectiveness of supplementary and therapeutic feeding programs.
- Determine incidence of low birth weight
- Determine rate of weight gain or loss of children registered in MCH clinics.
- Determine ORS needs and distribution system.

## **C. Water**

### **1. Displaced Population Situation**

- Determine the amount of water available per person per day.
- Determine the source and quality of the water.
- Determine how long the daily amount has been available
- Determine evidence of water-related diseases.
- Determine length of time users wait for water.
- Determine types of wells, transportation, and/or storage systems used.
- Determine if there are problems with well repair/rehabilitation.
- Determine if there is equipment/expertise on site, on order, available if needed.
- Determine availability of additional sources of safe water if required.
- Determine the need for water engineers to assist with evaluating requirements.

### **2. Functioning Water System Disruption**

- Describe the types of systems and sources that existed prior to the disaster in affected areas
- Specify how many people have been deprived of functional water supply.
- Determine who is in charge of local water system(s) (community group, committee, national authority).
- Determine whether the system is still functional or what the requirements for repair are.

- Determine the need for an engineering specialist to assist with evaluating requirements.

## **D. FOOD AND AGRICULTURE**

### **1. Food**

#### **Baseline Data**

- Describe the normal consumption pattern (food basket) of the affected population, any taboos, and acceptable substitutes.
- Describe the normal food marketing system (including government involvement, imports, subsistence)
- Indicate what food aid programs, if any, exist and describe them.
- Outline the indigenous food processing capacity.

#### **Effect of the Event on Food**

- Ascertain the disaster's effect on actual food stocks and standing crops (damaged/destroyed).
- Determine if access to food (e.g., roads, milling facilities) has been disrupted and, if so, how long it is likely to remain disrupted.
- Check market indicators of food shortages, such as:
  - Absence or shortage of staple grains and other foods on the market.
  - Price differential.
  - Change in supplies on the market (e.g., an increase in meat supplies may indicate people are selling animals to get money).
  - Change in wholesale grain availability.
  - Unusual public assembly at a warehouse or dockside when grain is being unloaded.
  - Changes in warehouse stocks.
  - Black market price changes or increase in black market activities.
  - Commercial import changes or proposed changes.
  - Sale of land, tools, draft animals, etc.
- Check nutritional indicators of food shortages, such as
  - Signs of marasmus, kwashiorkor, or other signs of malnutrition.
  - Increased illness among children.
  - Change in diet (i.e., quantity, quality, and type).
- Check social indicators of food shortages, such as:
  - Increased begging/fighting
  - Migration from rural to urban areas.

### **Food Availability**

- Determine how much food can be expected from future and/or specially planted, quick-maturing crops. Where in the production cycle was the affected area when the disaster struck?
- Estimate local government stocks on hand and those scheduled to arrive. Is borrowing of stocks on hand a possibility?
- Estimate the local commercial stocks on hand and scheduled to arrive.
- Estimate the local PVO/NGO/IO stocks on hand and scheduled to arrive. Is borrowing a possibility?
- Estimate local personal stocks on hand and scheduled to arrive.
- Determine regional availabilities.
- Canvass other donors to find out what they expect to contribute.
- Estimate how much food aid would be required during specific time periods.

### **Distribution Systems**

- Describe existing food aid distribution systems (e.g., government rationing, PVO/NGO/IO).
- Describe the effectiveness of the distribution system.
- Describe government marketing mechanisms.
- Judge the capacity of the above to expand/begin emergency aid. What is their record of accountability?
- Describe potential alternatives.
- Explain the country's (agency's) previous experience with mass feeding.
- Determine the availability of facilities and materials, including fuel.
- Determine whether repackaging facilities exist.

### **Social and Market Impact of Food Aid**

- Analyze the likely price impact on normal food suppliers. Describe the suppliers.
- Decide whether food aid would free cash and labor for other aspects of relief, or would divert labor and create a dependent attitude.

### **Other**

- Research any legal impediments to importation of certain foods.

## 2. Agriculture

### Baseline Data

- Describe crops grown in the affected area following the points listed below.
  - Crop name.
  - Average area planted (per data available).
  - Average production (per data available).
  - Planting season(s) (dates) and time to maturity.
  - Are crops climate-specific? If so identify the climatic requirements.
  - Are hybrid seeds being used in the area? If so, identify them
  - Are they cash or subsistence crops?
- Describe domestic animals present in each affected area following the points listed below:
  - Approximate number of animals in the area
  - Value of individual animals.
  - Use of animals for food.
  - Use of animals for work.
  - Use of animals for cash production.
  - Are bred stocks used in the area?
- Describe the agricultural system, including the following.
  - Land use systems.
  - Agricultural labor system/land tenure.
  - Crop preferences
  - Inputs.
  - Seeds (reserved or purchases). Is treated seed used ?
  - Fertilizer
  - Machinery/tools
  - Pesticides.
  - Storage (on farm, government, private).
  - Agro-business facilities, processing of local or imported commodities.
- Describe the local fishing industry.

### Effect of the Event on Agriculture

- Effect of the event on agriculture/livestock/fisheries.
- Ascertain the extent of damage to crop/livestock/fisheries by area, noting at what point in the production cycle the event occurred. State the source of the information.
- Estimate the loss in production (tonnage/head) by crop/livestock/fisheries and by zone within the affected area.
- Analyze whether losses will increase over time and state why
- Describe damage to agricultural machinery

- Describe damage to irrigation systems.
- Describe damage to seed, fertilizer, and pesticide stocks
- Describe damage to fishing gear.
- For a drought, compare current rainfall to the normal or recent past precipitation.
- Identify any unusual or untimely grazing changes.
- Describe any threats from insects or disease that might follow the disaster.

### **Agricultural Production Capabilities**

- Availability of inputs—by type (e.g., seed, fertilizer, pesticides, tools, machinery, veterinary medicines, fishing boats, nets, breeding stock).
- Estimate the local government stocks on hand and when they are scheduled to arrive.
- Estimate the local commercial stocks on hand and when they are scheduled to arrive
- Estimate the local personal stocks on hand and when they are scheduled to arrive.
- Ask the victims how they plan to cope with losses.
- Determine regional availabilities and elasticity of supplies.
- Ascertain what other donors plan to supply
- Outline what further inputs would be required to restore minimum productivity.
- Find out if repackaging facilities for seed, fertilizer, and pesticides exist
- Distribution systems/technical infrastructure.
- Outline host government (Ministry of Agriculture) operations in the affected area Does it provide:
  - Extension service,
  - Crop storage/silos,
  - Veterinary services,
  - Irrigation services,
  - Research facilities,
  - Hybrid seed,
  - Fertilizer,
  - Other plants (fruit trees), and/or
  - Pesticides?

### **Other**

- Describe any agricultural projects and inputs provided by foreign organizations/governments.
- Describe the operations of rural or agricultural credit organizations, cooperatives, or credit sharing organizations that exist in the affected area.

- Judge the capacity of the above to incorporate rehabilitation disaster assistance.

## **E. SHELTER**

### **1. Affected Population Profile**

- Determine the number of people requiring shelter and whether it is temporary (a few weeks) or a displaced population requiring shelter for an indeterminate time.
- Determine the average number of people in an individual dwelling.
- Identify obstacles that prevent victims from meeting their own needs both for temporary and permanent shelter.
- Determine area affected (e.g., portion of city, several villages, large area of a country)
- Approximate the number of private dwellings (single family, attached, low-rise and high-rise multiple family) and public buildings (schools, churches, hospitals) damaged or destroyed by city, village, or region.
- Determine the number of damaged dwellings that are habitable without immediate repair, that are habitable only after repair, and that are not habitable and must be destroyed.
- Inventory existing structures and public facilities that can be used as temporary shelters, giving careful consideration to access to sanitation and water.

### **2. Materials**

- Identify construction styles and materials normally used in the affected structures
- Determine the availability and costs of indigenous materials to meet both cultural and disaster resistance requirements.
- Identify any suitable material substitutes, locally or externally available, that would meet the cultural and disaster prevention requirements.
- Identify the type and quantity of building materials that the victims can provide for themselves for temporary or permanent shelter.
- Identify the type and quantity of building materials that the affected government can provide for the victims for temporary or permanent shelter.
- Determine the type and quantity of materials needed from external sources for temporary or permanent shelter.

- Assess the suitability (i.e., infrastructure support), of available sites for both temporary and permanent shelters, including, where necessary, mass sheltering.
- Determine if relocation is necessary due to the nature of the disaster. Identify the problems this may cause with the local population.
- Assess the potential hazard and security vulnerabilities of available sites for both temporary and permanent shelters.
- Assess the environmental conditions that would impose constraints on temporary shelters or camps, such as all season accessibility, proximity to sources of essential supplies (shelter materials, cooking fuel, water, etc.), soil, topography, drainage, and vegetation.
- Identify any problems related to land use such as grazing, cultivating, sanitation, and land tenure issues

### 3. Distribution

- Determine accessibility to the affected areas for both assessment and delivery
- Determine availability of a distribution mechanism (local, regional, national, or international) to distribute shelter materials (temporary or permanent) to the victims.
- Identify committees, credit unions, government agencies, or co-ops that can mobilize forces to help implement a shelter program.
- Determine if an equitable means of allocation and an appropriate medium of exchange for the building materials can be implemented

### F. Search and Rescue (SAR)

- Determine how many collapsed structures in an urban area have been affected. What types?
  - Hospitals, multistory public housing units, schools.
  - Buildings constructed of reinforced concrete or other materials that would leave voids where trapped victims could survive (not adobe or mudbricks):
    - Apartment buildings.
    - Industrial buildings.
    - Office buildings .
    - Hazardous installations creating secondary risks
  - Pre-dominant building types and construction material:
    - Wattle and daub
    - Masonry buildings (adobe, brick, concrete blocks, stone masonry).

- Reinforced concrete structures (frames with brick infill, frames with load bearing masonry walls, bearing walls, and prefabricated structures).
- Steel structures (multistory steel structures, steel frames enfilade with reinforced concrete).
- Timber structures.
- Other.
- Type of roof (reinforced concrete, steel, wood, grass, etc.)
- Determine if the local authorities request SAR assistance.
  - Type of assistance needed:
    - Search with technical equipment and/or dogs
    - Rescue with lifting, pulling, cutting, digging, and lighting equipment.
    - Medical to oversee and aid in victim extraction.
    - Special operations for removing hazardous materials, demolition, shoring of dangerous structures, or damage and emergency repair.

## **G. SANITATION**

### **1. Displaced Population Situation**

- Determine the placement, number, and cleanliness of latrines.
- Determine if the design and placement of latrines is affecting their use due to cultural taboos.
- Determine if there is a sanitation plan if the population increases
- Determine evidence of water-related diseases
- Determine the proximity of latrines and refuse areas to water sources, storage areas, and distribution points.
- Determine the placement and plan for the disposal of corpses.
- Determine if there is a plan for the collection and disposal of garbage.
- Determine if there is an insect and rodent control plan.
- Determine the need for a specialist to assist with evaluating requirements.

### **2. Non-displaced Population Situation**

- If the disaster occurs in a rural area, waste disposal is usually not a problem unless sewage "ponds" in a public area. Determine if this is occurring.

- If you are on an island affected by hurricane or in an area affected by flooding, determine if the sewage drainage system is still open. [See also Infrastructure.]
- Determine the adequacy of sewage disposal facilities in any public buildings or other areas being used to temporarily shelter homeless people.

## H. LOGISTICS

### 1. Airports

- Identify the airport being assessed by:
  - Name
  - Designator.
  - Location.
  - Elevation.
- Describe the current condition of facilities.
- Ascertain whether the airport is fully operational. Daylight hours only?
- Furnish information on usable runway lengths and location(s)
- Determine whether taxiways, parking areas, and cargo handling areas are intact.
- Establish whether runway and approach lights are operating.
- Specify which navigational aids are operating.
- Describe available communications facilities.
- Determine whether the terminal building is operating
- Check the availability and cost of aviation fuel
- Find out if facilities exist for mandatory aircrew rest.
- Explore whether the cargo handling area can be lighted for night cargo operations.
- Determine what cargo handling equipment is available, including fuel and operators:
  - Forklifts (number, capacity).
  - Scissors lift (capacity).
  - Cargo dollies (number).
  - Trucks with drivers and laborers for hand unloading
- Determine what startup equipment is available, including fuel and operators.
- Describe maintenance operations (facilities, personnel, hours)
- Outline what storage is available:
  - Covered?
  - At the airport? Off airport? How far?
  - Capacity and suitability for storage of foods or other perishables

## 2. Civil Aviation

- Find out whether arrangements can be made for prompt overflight and landing clearances.
- Ascertain that the air controller service is functioning.
- Specify working hours for airport personnel
- Explore having "no objections" fees or "royalty" fees waived or paid locally.
- Find out if arrangements can be made to work around the clock, including customs.
- Identify personnel to tally and document cargo as it is received and transshipped.
- Ascertain that the host government will accept deliveries by means of military as well as civil aircraft
- Describe security arrangements
- Determine what repairs and/or auxiliary equipment would be needed to increase airport capacity. How soon can local authorities be expected to restore service?
- Determine if there are any local air carriers, their availability, and their rates.

## 3. Alternative Aircraft

- Identify any usable airports or suitable helicopter landing sites in the disaster zone.
- Determine the local availability and cost of helicopters and/or fixed wing aircraft.
- Estimate their capacity.
- Identify the owners/agents.
- Determine the availability and cost of fuel.

## 4. Seaports

- Identify the port being assessed by:
  - Name and location.
  - Describe the current condition of facilities.
  - Ascertain whether the port is fully operational Daylight hours only?
  - Security fences/facilities.
  - Percentage of port losses reported.
  - Collection for port losses possible?
- Determine whether the disaster has altered the physical characteristics of the port, e.g. ;
  - Depth of approach channels.
  - Harbor.
  - Turning basin.

- Alongside piers/wharves.
- Availability of lighters
- Determine whether the disaster has blocked or damaged port facilities:
  - Locks
  - Canals.
  - Piers/wharves
  - Sheds.
  - Bridges.
  - Water/fuel storage facilities.
  - Communications facilities
  - Customs facilities
- Describe the berths
  - Number.
  - Length.
  - Draft alongside (high tide and low tide)
  - Served by rail? Road? Sheds? Lighters only?
  - Availability.
  - Check the availability and cost of fuel.
  - Determine what cargo handling equipment is available, including condition, fuel, and operators.
  - Heavy lift cranes (number, capacity)
  - Container and pallet handling (with port equipment? with ship's gear only?).
- Outline what storage is available.
  - Covered?
  - Hardstand space?
  - Capacity?
  - Quality?
  - Security?
- Find out if pilots, tugs, and line handlers are available.
- Specify working hours for the port
- Specify working hours for customs.
- Determine whether arrangements can be made with port and host country authorities to obtain priority berthing for vessels delivering disaster relief shipments.
- Identify an adequate number of personnel to tally and document cargo as it is received and transshipped
- Check the history of turnover time What effect has the disaster had on turnover time?
- Determine what repairs and/or auxiliary equipment would be needed to increase port capacity. How soon can local authorities be expected to restore service?

## 5. Transfer Points

- Identify transfer points by location.
- Determine whether surface transportation for cargo is available from airports and seaports.
  - Road?
  - Railroad?
  - Canal/river?
- Estimate the capacity of transfer points, including handling
- Outline what storage is available.
- Describe security arrangements.
- Identify an adequate number of personnel to receive and document cargo for transshipment.

## 6. Trucking

- Describe damage to the road network as it relates to the possibility of delivering relief supplies by truck.
- Indicate any restrictions such as weight, width, length, or height limitations at bridges, tunnels, etc.
- Determine whether it is possible to bypass damaged sections of the road network and what weight restrictions would apply.
- Determine whether containers can be moved inland.
  - 20 feet
  - 40 feet
  - To the disaster site or to a transfer point?
- Check the availability and cost of host government-owned trucks.
- Check the availability and cost of PVO/NGO/IO-owned or operated vehicles.
- Check the availability and cost of commercial vehicles.
- Determine the types, sizes, and number of commercial vehicles available.
- Judge whether the relief program could or should contract for any of the above trucks. What would be the freight rates per ton? What about collection for losses?
- Ascertain that maintenance facilities and spare parts are available.
- Outline measures to provide for security of cargo in transit
- Check the availability and cost of fuel.

## 7. Railroads

- Identify and locate any railroads in the disaster stricken area. Assess their current condition.

- Describe any damage to the electrical power system.
- Identify any interdictions—damaged bridges, tracks, fallen trees, etc
- Judge the reliability of the rail system.
- Determine whether cars can be made available for relief shipments on a priority basis.
- Determine the capacity and cost of rail shipments.
- Outline security measures to protect cargo in transit.

## 8. Warehousing

- Identify undamaged, or damaged but usable, warehouses located in reasonable proximity to the disaster site.
  - Determine capacity of these warehouses.
  - Determine their availability over a specific period of time.
  - Specify whether the warehouses are government, PVO/ NGO/IO, or privately owned
  - Determine whether they are staffed or not.
  - Determine cost per square meter.
  - Assess the adequacy of the warehouses' construction:
    - Ventilation.
    - Lighting
    - Hard floor.
    - Fireproofing.
    - Loading docks.
    - Condition of roof (check during day).
- Describe loading/unloading equipment that is available:
  - Pallets
  - Forklifts and fuel for them
- Ascertain that adequate security exists:
  - Perimeter fence.
  - Lighting.
  - Guards.
- Determine whether any refrigeration is available.
- Determine whether sorting and repackaging facilities exist.
- Determine whether fumigation is necessary and available for food, medicines, etc.
- If assessing a functioning warehouse determine:
  - Accounting and record keeping procedures.
  - Bin/stock cards on piles must match warehouse register
  - Physical inventory checks at random intervals.
  - Use of waybills.
  - Stacking methods.
  - Spacing system between rows.
  - Cleanliness.
  - Commodity handling system.

- Reconstitution of damaged goods.
- Prompt disposal of damaged goods.
- First in/first out system.

## I. COORDINATION CAPACITY

- Evaluate the coordination capacity of the following by identifying qualified personnel, reviewing program descriptions, evaluating past performance:
  - Affected government. Describe coordination operation among various levels of government and their ability to provide liaison with outside donors.
  - PVO's/NGO's/IO's Do PVO's/NGO's/IO's have sufficient experienced field staff to carry out their present activities effectively and expand them if required? What is their coordination link with the affected government?
  - Local service agencies, e.g , credit unions, cooperatives.
- Describe coordination mechanisms, including meetings
- Determine whether a lead agency has been designated.

## J. INFRASTRUCTURE

- Determine the pre-disaster condition of infrastructure.
- Ascertain from the affected government, the minimum needs for infrastructure recovery.

### 1. Communications

- Describe where the system's facilities are located.
- Determine the broadcast/reception area or zone of influence (e.g., towns serviced by system).
- Identify the organization/firm that is responsible for operations and maintenance of the system. Is there a disaster response plan with identification of priority facilities, material supply, priority screening of messages?
- Obtain technical information, such as:
  - Broadcast power.
  - Operating frequencies, call signs
  - Relay/transmission points.
  - Hours of operation.
  - Standby power sources.
  - Mobile capability.
  - Repair/maintenance facilities, including capabilities of manufacturer's local agent.
  - Language of transmission
- Identify key personnel (owners, management, operations, maintenance).

- Determine the degree of integration of military and civilian communications networks.
- Note the source(s) of the above information
- Determine what communications facilities exist that are operable or easily repaired and could be used to pass assessment information and to assist in coordination of life-saving responses.
- Identify the type of system assessed.
  - Radio.
    - Private Ownership.
    - Commercial.
    - Broadcast
      - 2-way
      - Amateur.
      - Citizens Band.
      - Public systems
        - Police.
        - Armed Forces
        - Government agencies (which ministries have communications facilities?).
      - Telephone
      - Cable and wireless.
      - Television.
      - Newspaper.
      - Other.
- Describe specific reasons why a system is not operating.
  - Unavailability of
    - Personnel
    - Power.
    - Fuel.
    - Access to facilities.
    - Damage to system.
      - Broadcast/transmission equipment.
      - Antennae.
      - Buildings.
      - Transmission lines.
      - Relay facilities.
      - Power source
      - Other.
- Note source(s) of the above information.
- Outline options for restoring minimum essential services.
- Identify local/regional suppliers of communications equipment and materials available for repair. Check cost and availability.
- Determine the local/regional availability of technical services available for repair.

## 2. Electric Power

- Describe the power system including:
  - Base load facility.
  - Peaking facility
  - Number of units
  - Fuel source.
  - Plant controls.
  - Output capability (specify voltage and cycle).
  - Mobile plants.
  - Other standby capability.
  - Switching facilities.
  - Transmission facilities.
  - Distribution facilities (number of substations).
  - Interconnections.
- Inventory auxiliary equipment that may be available locally, from construction companies, for example.
- Determine why power is not available (i.e., at what point the system has been damaged).
- Ascertain the condition of generating units.
- Check the integrity of the fuel system.
- Determine whether towers, lines, and/or grounding lines are down.
- Assess the condition of substations.
- Outline the impact of power loss on key facilities such as hospitals and water pumping stations.
- Describe options for restoring minimum essential services.
- Ascertain whether load shedding and/or switching to another grid can restore minimal services.
- Identify local/regional suppliers of equipment and materials. Check cost and availability.
- Determine the local/regional availability of technical services available for repair.

## 3. Water/Sewerage

- Describe the pre-existing systems: i.e., for water, the source, treatment facilities, mains, pump stations, and distribution network; and for sewerage, the treatment facilities and pump stations.
- Estimate the numbers of people who depend on the water sources by type (e.g., river, city water system)
- Determine why water (especially potable water) is not available (i.e., at what point the system has been damaged).
- Check the integrity of the water source.

- Assess the condition of water and sewerage treatment facilities and of the distribution network. Are pump stations operational?
- Determine whether water mains are broken. Are leaks in the sewerage system contaminating the water supply?
- Outline the impact of water loss on key facilities and on individual users. How quickly can the responsible ministries be expected to restore services?
- Describe options for restoring minimum essential services
- Evaluate possible alternative water sources.
- Identify local/regional suppliers of equipment and materials. Check cost and availability.
- Determine local/regional availability of technical services available for repair.

#### **4. Hydro Facilities (Hydroelectric, Irrigation)**

- Describe the function of the facilities, their proximity to the stricken area, and their relationship to the disaster itself.
- Identify the host country organization that controls and operates the facilities.
- Identify the suppliers, contractors, and/or donors that built the facilities (i.e., what were the equipment and technical sources?).
- Describe any damage to systems.
- Check the soundness of structures and outlet works. Are reservoirs watertight?
- Identify any immediate or near-term safety risks (generating and control machinery, structural defects, power to operate gates, etc.).
- Assess the condition of canals and/or downstream channels.
- Identify any changes in watershed conditions (e.g., saturation, ground cover, stream bed loading, new impoundments)
- Determine whether water is being contaminated
- Evaluate the management of the facilities.
- Determine whether storage and outflow quantities are being managed in accordance with prescribed curves.
- Identify preparations for follow-on storm conditions (e.g., emergency draw down of reservoirs).
- Describe the probable impact of discharging on downstream damage and/or relief efforts (e.g., depth at river crossings, releases into damaged canals). Is there a need to impound water until downstream works can be repaired?
- Outline options for restoring minimum essential services.
- Outline repair plans of the responsible host country officials.

- Check on any proposed assistance from the original donors of the facilities.
- Identify local/regional sources of equipment and technical expertise.

## 5. Roads and Bridges

- Describe road networks in the affected area by type. What is the load capacity of the bridges?
- Identify the responsible ministries and district offices and constraints on their operations.
- Describe any damage to the network.
- Determine which segments are undamaged, which can be travelled with delays, and which are impassable.
- Describe any damage by type:
  - Blockage by landslides, fallen trees, etc.
  - Embankments.
  - Drainage structures
  - Bridges/tunnels
  - Road surfaces.
- Identify alternate crossings and/or routes.
- Evaluate the importance of the road network to the relief effort and to rehabilitation
- Outline options for restoring minimum essential service.
- Determine which elements must be restored first.
- Describe needs for traffic control (police, military, other) on damaged or one-way segments
- Determine how long emergency repairs can accommodate relief traffic (size, weight, volume?). Will emergency maintenance and fuel points be needed in remote areas?
- Identify host country agencies, military, and/or civilian forces available to make repairs. Do they have equipment, spare parts, maintenance support?
- Check whether local or expatriate construction companies can loan equipment and/or expertise.
- Check regional sources of equipment and/or expertise available for repair.
- Ascertain that arrangements can be made for standby forces at damaged sections to keep roads open

# Populations at Risk

## A. Introduction

This unit provides *reference information* for dealing with populations that are at risk. This information is useful for Assessment Teams gathering information on the plight and condition of these people or by a DART which has been sent to assist in dealing with relief activities targeted at these individuals.

Populations at risk are those groups of people adversely affected by a disaster (natural or manmade), who have been placed in situations where they are at an increased risk. They are at risk due to the disruption or loss of their normal community and social support systems that provide the critical elements of their survival: water, food, immunization, health care, shelter, and sanitation. The negative impacts on populations at risk increase the longer they are displaced from their homes. In some cases, these populations have also travelled great distances from their homes to escape long-term disasters such as famine, drought, and civil strife.

Tables located at the end of the unit provide additional reference information related to the issues discussed in the unit.

## B. Immediate Response

### 1. Protection of displaced people

The immediate needs for displaced people are that they are in a secure location where their safety and human rights are ensured. It is difficult to begin an assistance program in an unsafe location or in an atmosphere of vulnerability.

The International Committee of the Red Cross (ICRC), the United Nations High Commissioner for Refugees (UNHCR), and United Nations Department of Humanitarian Affairs (DHA) often attempt to protect displaced populations from arbitrary actions of outsiders and to provide relief assistance. OFDA Assessment Teams and DART's should support the efforts of the ICRC, UNHCR, and DHA. However, Assessment Teams and DART's should not assume any responsibility for the protection of displaced people.

## 2. Organizational Considerations

Once the situation and needs have been assessed and the protection of individuals has been secured, the priority will be to provide vital immediate assistance to the displaced population. To do so, key organizational and planning decisions must be made, which may determine the future of the whole operation. These decisions involve the issues summarized below. If these issues are not addressed quickly and correctly, they will be difficult to resolve later.

- The location of the displaced people will have a major influence on all sectors of assistance. If the displaced people are not already concentrated in settlements, they should not be relocated to settlements unless compelling reasons exist for breaking their present pattern of spontaneous informal settlements. New arrivals should be diverted elsewhere. On the other hand, if they are already in settlements that are unsatisfactory, they must be moved. The difficulty in moving displaced people from an unsuitable site increases markedly with time.
- Reception or transit centers are generally recommended when an influx is likely to continue.
- Control at campsites: A determination of the optimum population should be made in advance to plan for new campsites accordingly. Careful control of the population in a camp should be exercised as people arrive, so that sections prepared in advance are filled in an orderly manner.
- Numbers and registration. An accurate estimate of numbers is a prerequisite for any effective assistance. Delivery of help to all in need will require at least family registration and a fair distribution system. The sooner this is established the better.

## 3. Material Assistance

The specific types and amounts of emergency assistance required will depend on standards established for each situation. These standards are:

- The general condition of the displaced population (people in extreme distress will need extraordinary measures).
- Immediately available resources (e.g., unfamiliar food may have to be used if there is nothing else).
- The normal customs of the displaced people and the local population.

The standards established for emergency assistance must be consistent with the aim of ensuring the survival and basic well-being of the displaced population, should be fairly applied to all, and must be respected by all involved.

The first priority in an emergency is to provide the organizational capacity required to meet the needs of the emergency. The local government and PVO's/NGO's/IO's must be mobilized within the framework of a plan for immediate action. The organization of the logistical capacity necessary to deliver the assistance will be of critical importance.

Once the organizational capacity has been established, the immediate needs of the displaced population must be met. The following is a list of needs in the order of their importance.

### **Water**

Protect existing water sources from pollution. Establish maximum storage capacity with the simplest available means. Transport water to the campsite if the need cannot otherwise be met.

### **Food**

Ensure that at least the minimum need for energy is met. A full ration can follow. Set up special feeding programs if there are clear indications of malnutrition. Establish storage facilities.

### **Immunization for Measles**

The first preventative health measure to be taken in any large displaced person situation is to institute a measles immunization program for all children between 6 months and 5 years of age, even when resources are scarce. If significant malnutrition is present, it is **absolutely essential** to implement a vaccination program as soon as possible! After diarrhea, measles is the highest cause of death among children under 5 years of age in displaced person situations.

### **Health Care**

Provide the necessary organizational assistance, health personnel, basic drugs, and equipment in close consultation with national and local health authorities. Although the immediate need and demand may be for curative care, preventative and particularly environmental health measures should not be neglected.

After the primary needs have been addressed, the focus will be on providing secondary needs. They are

### **Emergency shelter**

Use local supplies and services, when possible, to meet shelter needs for roofing and other materials. Only request outside supplies (e.g., plastic sheeting, tents) if absolutely necessary

### **Sanitation**

Isolate human excreta from sources of water and shelter.

Promote self-sufficiency in the displaced population from the start. Involve the displaced in the planning for their welfare. This may be difficult, but if it is not done the effectiveness of the emergency assistance will be severely reduced, and an early opportunity to help the displaced population to start recovering from the psychological effects of their ordeal may be missed.

The remaining sections in this unit provide an in-depth review of the needs of a displaced population, focusing on: food, water, immunizations, health, sanitation issues, and emergency shelter.

## **C. Water**

### **1. General**

People can survive much longer without food than without water. Thus, *the provision of water demands immediate attention from the start of a displaced person emergency. The aim is to assure availability of enough fresh water to allow unrestricted distribution and safe drinking.*

Adequate storage capacity and backup systems for all water supplies must be assured, since interruptions in the supply may be disastrous. To avoid contamination, all sources of water used by displaced populations must be separated from sanitation facilities and other sources of contamination.

Availability will generally be the determining factor in organizing the supply of sufficient quantities of safe water. It may be necessary to make special arrangements for water extraction, storage, and distribution. Measures will be required to protect the water from contamination. In some circumstances, treatment will be required to ensure that the water is safe to drink. The safety of the water must be assured right through to consumption in the home

Improvements in the existing water supply may take time, particularly if it is necessary to drill or dig wells. In many displaced person emergencies, only contaminated surface water (standing water, streams, or rivers) is initially available. Immediate action must be taken to stop further pollution and reduce contamination of such water. If it becomes evident that available sources of water are inadequate, arrangements must be made to bring in water by truck. Where even the most basic need for water cannot safely be met from existing sources in the area, and when time is needed for further exploration and development of new sources, the displaced people should be moved to a more suitable location.

## **2. Assessment and Organization**

*An immediate on-the-spot assessment of water sources in relation to needs is essential.* On-the-spot assessments can be done by the government's central and local water authorities and experts who can provide indispensable knowledge of the local terrain and conditions. Expertise from outside the country should be brought in only when clearly necessary.

Available water sources must be protected from pollution and contamination at once. Initially, rationing of scarce water may be needed. An influx of displaced people may overburden water resources used by the local population. Rationing will ensure survival of the weak and equity in distribution to the rest of the displaced population. The design, establishment, and function of a water supply and distribution system must be closely coordinated with the site planning and layout, and with health and environmental measures, particularly sanitation.

### **a. Assessment**

Although estimating the need for water does not require special expertise, assessing different sources of supply does. Depending on the situation, sources of water may be identified by:

- the local population.
- the displaced people themselves.
- the lay of the land (ground water is often near the surface in the vicinity of rivers and in low places generally, or is indicated by richer vegetation).
- maps and surveys of water resources.
- national and expatriate experts (hydrologists).
- water diviners.

The assessment of these water sources is the basis for selecting an appropriate supply and distribution system and requires expertise in water engineering, sanitation (testing, purification), and in some cases, logistics.

Seasonal factors must be carefully considered. Supplies that are adequate in the rainy season may dry up at other times. Local knowledge will be essential.

#### **b. Personnel and Material**

Using local sources of information and expertise is recommended and may include central and local government departments (e.g., interior, public works, agriculture, water resources); the UN system, especially UNICEF; bilateral aid programs; PVO's/NGO's; and engineering consultants and contractors. If outside assistance is necessary, it should be provided when possible in support of local experts.

The water system must be developed with and operated by the displaced people from the start, to the extent possible. The displaced people, particularly those of rural background, may have relevant skills. For example, some individuals from rural communities may be experts at digging and maintaining wells. Others may be familiar with simple pumps or common pump motors. Such skills can and should be fully used in planning, developing, and operating the water system. Displaced people without prior experience should be trained as necessary.

Although special equipment may be required for ground water exploration or surface water purification, the material and equipment to establish a water supply and distribution system should be found locally. The technology should be kept simple, appropriate to the country, and draw on local experience. Where pumps and other mechanical equipment are unavoidable, supplies should be standardized, and repair expertise and fuel should be available locally.

For the water system to remain effective, both organizational and technical aspects of the complete water supply system need to be carefully monitored. Use of the system must be controlled; water wastage and contamination prevented, maintenance assured, and technical breakdowns quickly repaired. Basic public health education on such topics as the importance of avoiding polluting the water with excreta and the use of clean containers in the home is also essential. Where a water supply and distribution system has to be established with the help of expatriates and

mechanized technology, operation and maintenance by displaced people and other local personnel must be assured before the departure of the expatriates. If this is not done, even the best system will break down.

### 3. Needs

#### a. Quantity

Minimum water needs will vary with each situation but increase markedly with raised air temperature and physical activity. In general, the following amounts of water are desirable:

<b>Individuals:</b>	15-20 liters/person/day
<b>Health centers:</b>	0-60 liters/patient/day
<b>Feeding centers:</b>	20-30 liters/person/day

For individuals, the total amounts of water represents water used for drinking (3-4 liters), kitchen (2-3 liters), personal hygiene (5-7 liters), and laundry (4-6 liters) *A quick reference matrix for calculating the amount of water needed for displaced populations (1,000,000 liter increments), for various time periods is located in table 1 at the end of this chapter.*

Additional water may be needed for livestock, sanitation facilities, other community services, and irrigation. Cattle need approximately 30 liters of water daily and small stock require 5 liters. Water will also be a factor in deciding on a sanitation system. For example, one aquaprivy has a water tank volume of 1,000 liters, to which 5 liters per user must be added daily to maintain the water seal. The OXFAM sanitation unit requires up to 3,000 liters per day to serve 1,000 persons. Water is also necessary for the cultivation and irrigation of food by the displaced people. During the initial stages of an emergency, waste water may be the only type of water available, but it can suffice for small vegetable patches. Large-scale irrigation is a matter for expert advice and therefore not addressed here. If possible, however, water sources for large scale irrigations should be identified and reserved at an early stage.

Care should be taken to avoid pollution or depletion of scarce water sources by livestock. *The more convenient the supply, the higher the consumption*

*Reduction in the quantity of water available to individuals has many health consequences. Proper supplementary and therapeutic feeding programs will be impossible unless sufficient water is*

*available for preparation of food and basic hygiene. As supplies are reduced, clothes cannot be washed; personal hygiene suffers; cooking utensils cannot be properly cleaned, food cannot be adequately prepared, and most importantly, the direct intake becomes insufficient to replace moisture lost from the body.*

Water reduction is also reflected by increased incidence of parasitic, fungal, and other skin diseases, eye infections, diarrheal diseases, and often fatal dehydration associated with them. Even individuals who have traditionally lived on less than the normally recommended amount of water, such as nomads, will require more in a displaced person community due to crowding and other environmental factors.

*Water will probably be of little use in controlling major fires on displaced person camps owing to a lack of sufficient quantity and pressure.*

*Plans for the size of a camp must be flexible enough to accommodate the possible arrival of additional displaced people.*

#### **b. Quality**

Water must be safe to drink. Although it may look safe, it may be impure and contain microbiological organisms that cause diseases. "Water-borne" diseases are not usually as serious or widespread as "water-washed" diseases, such as skin and eye infections, which result from insufficient water for personal hygiene. *Nevertheless, a large quantity of reasonably safe water is preferable to a smaller amount of very pure water.* The most serious threat to the safety of a water supply is contamination by feces. Once contaminated, it is hard to purify water quickly under emergency conditions

Where drinking water is scarce, brackish or even salt water, if available, may be used for domestic hygiene.

New water supplies should be tested before use. Existing supplies should be tested periodically, and immediately after an outbreak of any water-borne disease. The most useful and widely used tests detect and enumerate common fecal bacteria, such as fecal coliforms. Indicators of water quality are:

- *Escherichia coli* or fecal streptococci contamination will be indicated by the presence of fecal coliforms.
- *Escherichia coli* and fecal streptococci are subsets of fecal coliforms which are a subset of the total coliforms.
- Both the fecal coliform numbers given and the chlorination concentration mentioned are two primary water quality indicators.

The actual test will depend on the normal practice of local water laboratories and experience of local sanitarians. The presence of fecal coliform bacteria indicates that the water has been contaminated by feces of humans or other warm-blooded animals. Concentrations of fecal coliforms are usually expressed the fecal coliform count per 100 ml of water. As a rough guide:

<u>Fecal Coliforms per 100 ml</u>	<u>Risk</u>
0-10	Reasonable quality
10-100	Polluted
100-1000	Very polluted
Over 1000	Grossly polluted

In cases where water is disinfected by chlorination, it is easier and more appropriate to test for the presence of free chlorine than for bacteria. The presence of free chlorine at approximately 0.2 mg/l at the distribution point indicates that almost all bacteria and viruses have been killed, and the water is no longer heavily contaminated with fecal or other organic matter.

Water stored in tanks and tanker trucks should also be tested periodically. Domestic hygiene and environmental health measures should be taken to protect the water between collection and use.

#### 4. Immediate Response

Measures to meet short-term water emergency needs are appropriate while a longer term supply system is being developed or pending the move of the displaced people to a more suitable site. If the locally available water supply is not sufficient to meet the minimum needs of the displaced, arrangements must be made to bring in water by truck. If this is not possible, the displaced population must be moved from the site without delay.

While the quantity of water available may meet initial minimum needs, the quality of the water may be the problem; it is likely to be contaminated. Efforts to control and manage the use of contaminated water should be arranged with the displaced community leaders. Otherwise, displaced people will use surface water or less often, ground water (well or spring), or whatever water is closest, regardless of quality for their immediate needs. Immediate steps should be taken to prevent pollution by excreta. If the water source is flowing, supplies must be drawn off upstream and a special area set aside for this. Then allocate an area for washing and finally, downstream of the settlement, allow any livestock to water

Where the source is a well or spring, it must be fenced off, covered, and controlled. Prevent displaced people from drawing water with individual containers that may contaminate the source. If possible, make immediate arrangements to store water and to distribute it at collection points away from the source. Not only does this help avoid direct contamination but storage can make water safer.

From the start, families will need to carry and store their own water at the household level. Suitable containers (10–20 liters) are essential. If empty cooking oil containers or the like are unavailable, buckets or other containers must be supplied. They must be kept clean.

If immediately available supplies of water are insufficient, priority will be given to rationing supplies and ensuring equitable distribution. Rationing is difficult to organize. The first step is to control access to sources, using full-time watchmen if necessary. Uncontrolled distributions are open to abuse. Distribution at fixed times for different sections of the camp should be organized. Vulnerable groups may need special arrangements. Every effort must be made to increase the quantity of water available so that strict rationing is unnecessary.

## **5. Water Sources**

There are three main sources of water: surface water (streams, rivers, lakes), ground water (underground or emerging from springs), and rainwater.

### **a. Surface Water**

Surface water is collected directly from streams, rivers, ponds, lakes, dams, and reservoirs. Where such a source holds water year-round, the water table in the vicinity can be expected to be near the surface. However, it is rarely pure and is likely to require treatment measures for direct use. Direct access may also cause difficulties with the local population. It is preferable to use ground water that has passed through the natural filter of the soil than to collect water from the surface. However, if the ground is not sufficiently porous to allow extraction of enough water from wells, surface water may be the only option. In such circumstances, emergency treatment measures such as storage, sand filtration, or even chlorination are advised and control of its access is essential.

## **b. Ground Water**

*Springs are the ideal source of ground water. Spring water is usually pure at the source and can be piped to storage and distribution points. Spring water should be collected above the camp, if possible, and care should be taken to check the true source of spring water. Some springs may be nothing more than surface water that has seeped or flowed into the ground a short distance away. Once detected, the source of the spring water must be protected against pollution as it flows to a tank or collection point. Care must also be taken to prevent contamination above the takeoff point. The supply of water from a spring may vary widely with the seasons, being at its minimum at the end of the dry season.*

If water requirements cannot be met by springs, the next best option is to raise ground water by means of tube wells, dug wells, or bore holes. Ground water, being naturally filtered as it flows underground, is usually microbiologically pure. The choice of method to raise ground water will depend on the depth of the water table, yield, soil conditions, and availability of expertise and equipment.

While wells are often used to access ground water, they have several disadvantages. Without good water resources surveys, preliminary test drilling, or clear local evidence from nearby existing wells, there is no guarantee that new wells will yield adequate supplies of water or of the right quality. Digging wells can also be expensive. A hydrogeological survey must be undertaken before starting any extensive drilling program. For these and other reasons, it is often better to attempt to improve an existing well with an inadequate yield rather than dig a new one.

Wells, bore holes, and pumps must be disinfected immediately after construction, repair, or installation, as they may have been polluted during work. *Wells must also be protected from pollution. They should be located where surface water, seasonal rain, or flood water will drain away from the well head. They should be located above and at least 15 to 30 meters away from any sanitation facilities and their discharge.*

## **c. Rainwater**

Rainwater may be the major source of water in areas with adequate and reliable year-round rainfall. Reasonably pure rain water can be collected from the roofs of buildings or tents if clean and suitable. Collecting rainwater, however, is unreliable and requires suitable shelter as well as individual household storage.

facilities, making it generally impractical for some displaced person emergencies. However, *every effort should be made to collect rainwater*. Small collection systems, such as using local earthenware pots under individual roofs and gutters, should be encouraged. Allow the first rain after a long dry spell to run off, thus cleaning the catchment of dust and sediment.

#### **d. Sea Water**

Sea water can be used for almost everything but drinking, and thus reduces fresh water requirements.

#### **e. Water Source Considerations**

Consider the following when selecting an appropriate water source:

- speed with which source can be made operational
- volume of supply.
- reliability of supply (taking into account seasonal variations and, if necessary, logistics).
- water purity, risk of contamination, and ease of treatment if necessary.
- rights and welfare of local population.
- simplicity of technology and ease of maintenance.
- cost.

Take careful account of systems and methods already in use locally. Adopting well-proven and familiar techniques, combined with efforts to improve protection against pollution, is often a sound solution.

In addition to organizational measures to protect the water supply, some form of treatment may be necessary. However, water sources that would require treatment should be avoided if at all possible. The purification of unsafe water, particularly in remote areas, can be difficult and requires trained supervision.

### **6. Storage**

*All displaced person camps must be provided with facilities to store an adequate reserve of water as soon as possible*. In nearly all systems it will be necessary to store water in covered tanks between the source and distribution points. Stored water provides an essential reserve and can greatly facilitate distribution, particularly when water is pumped up to elevated tanks. Sedimentation tanks should have the capacity to store an amount of water equal to a day's consumption, thus allowing sedimentation to take place overnight. The size of the reserve will depend on

the number of people, the nature of the water supply system and certain logistical aspects. Using internal dimensions and overflow pipe heights, capacities are calculated as follows

- (a) Rectangular tanks:  
length x breadth x height (in meters) x 1,000 = capacity in liters;
- (b) Cylindrical tanks:  
height x radius squared (in meters) x 3140 = capacity in liters.

OFDA provides 3000 gallon collapsible water tanks to disaster victims from its stockpiles.

In areas with pronounced dry and rainy seasons where alternative sources of water are limited, the construction of a reservoir to collect water should be considered despite dangers of pollution and breeding mosquitoes. An erosion-protected overflow spillway should also be provided. Catchment tanks for the collection of surface water can also be considered in drier parts of the world. Pits can be dug into the ground to catch and hold water that runs off hard ground during heavy storms. Pits need special lining to hold water, and should be covered if possible.

Where the water table is very high and contamination cannot be otherwise avoided, above-ground tanks may be needed. A number of types of simple, air-portable, butyl rubber storage tanks are available. Some can be supplied together with a complete distribution system.

## 7. Distribution

Water distribution will be an important consideration in the layout of the camp as displaced people must have easy but controlled access to water. Experience shows that persons forced to fetch water from considerable distances tend not to fetch enough to limit water-washed diseases or collect water from closer but contaminated sources. Ideally, no dwelling should be located further than 100 meters or a few minutes' walk from a distribution point. Distribution points should not be located in low lying areas. The area around the point should be paved with stones or gravel or protected by boards, with a run-off to allow proper drainage.

Water can be distributed to individuals in a number of ways depending on local conditions. Uncontrolled access by individual consumers to primary water sources must be avoided. *A distribution system should have a sufficient number of sources*

*and/or outlets relative to the size of the population to ensure that people do not wait for long periods to have access. Equity in the distribution of water is an extremely important consideration. Water for domestic use should flow between source/storage and distribution point in pipes to protect its quality. Pipes must be watertight; leaking pipes suck in pollution when the pressure drops or the system is turned off. Pipes may be made of metal, cement, plastic, or bamboo. Bamboo is unlikely to be suitable in the majority of emergencies. Plastic pipes are often the cheapest and easiest to lay. They are available in lengths of coiled, flexible pipe, and come in rigid lengths, commonly 3 meters. Pipes should be buried for protection and sections of the system should have isolated valves.*

Standpipes and push taps are recommended where possible as outlets for water. Taps, however, are very vulnerable and often require spares that must be available. Where water supplies are limited and the camp is crowded, valve distribution points that can be chained shut may be the only effective solution. *There should be one tap per 200–250 displaced people. The more people using a single source or outlet of water, the greater the risk of pollution or damage.*

A certain amount of waste water will be generated in the community, both at the individual and communal service level. While it must be prevented from becoming a danger to public health, waste water may be reused for livestock, vegetable gardens, or to flush latrines.

## 8. Treatment

Water may contain pathogens, particularly certain viruses, bacteria, protozoal cysts, and worm eggs that are transmitted from feces to mouth. While water contamination by human feces is the major concern, animal feces in water may also transmit disease. Water contamination by urine is a significant threat only in areas where urinary schistosomiasis (*Schistosoma haematobium*) is endemic. By far the greatest risk associated with polluted drinking water is the spread of diarrhea, dysentery, cholera, and infectious hepatitis (hepatitis A). Diarrhea and dysentery are caused by a variety of viruses, bacteria, and protozoa. The numbers of viruses and protozoa in water will always decrease with time and most rapidly at warm temperatures. Bacteria behave similarly, but in exceptional circumstances, they may multiply in polluted water. The infectious dose

of viruses and protozoa is typically very low, whereas the dose of bacteria needed to establish an infection in the intestine may be high, or as in the case of cholera, very low.

If necessary, water treatment should be at a minimum to ensure acceptably safe water, using appropriate technology and a reliable method. Determining how to treat water on a large scale is best done by experts. If possible, professional engineering advice should be sought. However, simple and practical measures can be taken before such help is available. All methods require regular attention and maintenance.

In addition to protecting water at its source and initially disinfecting wells and boreholes (usually by chlorine), there are four basic methods of treatment: storage, filtration, chemical disinfection, and boiling. These can be used singly or in combination.

#### **a. Storage**

*Leaving water undisturbed in containers, tanks, or reservoirs improves its quality.* Storage kills some pathogens and settles any heavy matter in suspension (sedimentation). If water supplies cannot be assumed to be safe, immediate action must be taken to provide maximum water storage capacity. Storage of untreated surface water for 12 to 24 hours will considerably improve its quality. The longer the period of storage and the higher the temperature, the greater the improvement. The clarification of cloudy water can be greatly speeded up by the addition of aluminum sulphate. A two tank system is often used; the first tank being a settling tank with the second storing the clarified water. Treatment can be done in the second tank as well, and a third used for storage if necessary. While clear water may only require chlorination, turbid surface water will usually require sedimentation and/or filtration before chemical disinfection. Even so, greater doses of chlorine may be required.

Great care should be taken to prevent the pollution of stored water. This can be done by covering storage tanks. In addition, the storage area should be fenced off and guarded to prevent children playing or swimming in the water.

Long-term storage can help control schistosomiasis (bilharzia) by killing parasites that die if they do not reach the fresh water snail within 24 hours of excretion by an infected person, or a human or animal host within 48 hours of leaving infected snails. Thus 2 days' storage would provide an effective barrier to transmission of the disease, if snails do not enter the tank.

## **b. Sand Filtration**

Sand filtration can also be an effective method of treatment. A proper slow sand filter works in two ways. First, the passage of the water through the sand physically filters out solids. Secondly, and more importantly, it causes a thin and very active layer of algae, plankton, bacteria, and other forms of life to develop on the surface of the sand bed. This organic matter is called the "schmutzdecke". The rate of filtration depends on the surface area, depth, and type of sand through which the water is passed, and the pressure of the water. The average range size of sand is 0.3–1mm. In general, the slower the rate of filtration, the higher the quality of treated water.

A packed drum filter can be used for sand filtration and is a good way of providing limited quantities of safe water quickly, for example, for a health center. If a packed drum filter is used, water should pass down through sand on a 5 cm layer of gravel and be drawn off at a rate not to exceed 60 liters per hour for a 200-liter drum. If a tap is used, unfiltered water equal to the amount drawn off should be added to the top. Other types of sand filters include the horizontal sand filter and river bed filter (suitable only where the bed is permeable). These can be used to treat larger amounts of water but are likely to be more difficult to set up quickly and effectively. To filter water from a river, a well may be dug close to the bank. Although, the water is river water, it will have been filtered through the bed and bank.

## **c. Chemical Disinfections**

Chemical disinfection as a method of water treatment on a large scale is recommended only when storage and/or filtration cannot meet the need. It will be required to purify wells, sand filters, pumps, and piped water systems. Both iodine and various forms of chlorine can be used, although chlorine is more widely used, cheaper, and often more readily available. The most generally suitable form of chlorine for displaced person emergencies is calcium hypochlorite powder.

Expert advice is essential for large-scale chlorination. All systems require regular attention and will be of little value if not fully reliable. Chlorination should take place after any sedimentation or filtration process. It requires at least 30 minutes to act.

Care must be taken to ensure strict control of any chemical disinfection process. Water should be tested for chemical residual levels after each disinfection and before distribution.

After chlorination, at least 0.2 parts of "free active chlorine" per million should still exist in the water to kill bacteria and viruses. The amount of chlorine required to achieve this is usually a broad indication of the level of pollution. If the amount of "free active chlorine" is above 0.5 parts per million, people may not want to drink the water. Over-chlorinated water tastes unpleasant and will be useless if people prefer untreated water. *Chlorine and iodine water purification tablets are available, but are rarely suitable to treat water for large populations.* Tablets, however, may be useful to treat water used in health or supplementary feeding centers.

#### **d. Boiling**

Boiling is the surest and perhaps simplest method of water sterilization. At low altitudes, bringing water to a boil will destroy all pathogens transmitted by drinking water. (Boiling should, however, be increased 1 minute for every 1,000 meters of altitude above sea level, as the boiling temperature reduces with altitude). Prolonged vigorous boiling is often recommended but not necessary to destroy the fecal-orally transmitted pathogens. In fact, prolonged boiling wastes fuel and increases the concentration of nitrates, which are dangerous for very young babies. In the longer term, domestic fuel supplies may be the determining factor, as boiling requires about 1 kg of wood per liter of water. However, if the displaced people have traditionally boiled their water, they should be encouraged to do so. This may make the need for other types of treatment less urgent.

### **D. Food and Nutrition**

#### **1. General**

The type of feeding program(s) required to meet the needs of the displaced people will be determined by the initial needs assessment. Continuous monitoring will ensure adjustments to reflect changing conditions. Coordination of the feeding program(s) with health and other community services is essential.

Assistance must be culturally acceptable and appropriate to the nutritional needs of the displaced people. Foods prepared locally with local ingredients are preferable to imported foods. Infant feeding policies require particular attention.

Infants, children, pregnant and lactating women, the sick, and elderly are very vulnerable to malnutrition and have special needs. Since the population has already suffered a prolonged

food shortage, many will be malnourished by the time of the first assessment of their condition and needs.

If the displaced people are already suffering the effects of severe food shortages, immediate action must be taken to provide whatever food is available to them. *The first priority is to meet the energy requirements of the population, rather than protein needs. Supplying bulk cereal is the first objective of the general feeding program.*

Displaced people must be involved from the start in the organization and management of the feeding program(s). Special training for some displaced people may be necessary.

Simple nutrition education is important when unfamiliar foods or new methods of cooking and preparation have to be introduced to the population. This should be organized with other health education activities to provide guidance on proper infant feeding, feeding of sick children, treatment of diarrhea, basic food hygiene, and the preparation of available foods for maximum nutritional benefit.

Particular attention must be paid to the provision of cooking fuel. A lack of cooking fuel can quickly lead to destruction of the vegetation around the camp and friction with the local population. On average a family will use 5 kg of wood per day to cook on a simple wood stove.

## **2. Nutritional Assessment and Surveillance**

Initial nutritional assessments should be completed by nutritional specialists if possible. If none are available, a survey can be completed by using information described in this section.

Follow-up surveillance of the population as a whole, should be done using the weight-for-height comparison method. This is done by weighing and measuring the height of a random sample of the child population at regular intervals. Children are the first to show signs of malnourishment during a food shortage. For this reason, a random sample of children less than 5 years of age (or less than 115 cm tall), should be measured regularly in a surveillance program. Their condition is an indicator of the amount and degree of malnutrition in the population as a whole. For a displaced population of under 10,000, a random sample of 200 children will provide a reasonably accurate estimate of overall child malnutrition. For a population of 10,000–20,000, however, a

sample size of at least 400 is required. Initially such surveys should be conducted every 2 months. When conditions have stabilized, a survey once every 3 to 6 months is sufficient. Any change or trend in nutritional status can thus be detected and adjustments made in the relevant feeding programs. *A chart with "weight-for-height" comparisons and a chart with "weight and height-for-Age (0-60 months)" comparisons are located in tables 2 and 3 at the end of this chapter.*

If the initial assessment indicates a need for supplementary or therapeutic feeding, individuals with these requirements should be identified and registered for appropriate programs. Their individual progress should be monitored through more frequent weighing at feeding centers

Conducting nutritional surveillance is a two-step process. First, the effectiveness of the food provided to the whole population (i.e., the general feeding program) should be determined by measuring a random sample of children. Second, the progress of vulnerable individuals and thereby the need for or effectiveness of selective feeding programs should be monitored.

#### **a. Malnutrition**

Malnutrition can be recognized by certain clinical signs (e.g., marasmus, kwashiorkor, and marasmic-kwashiorkor) and body measurements (see end of this unit for definitions). Body measurements are required for the objective assessment of nutritional status and the comparison with regular surveillance data. The **weight-for-height** method, which is expressed either as a percentage of a reference median or as a **Z-Score**, is preferred for nutritional surveillance and for measuring individual progress in emergencies. If a **percentage** is used, it indicates the weight of the child expressed as a percentage of that of a well-nourished child of the same height as given in international reference tables. If a **Z-Score** is used, the "**Z**" represents the median for children and a **Z-Score** represents the **number of standard deviations above or below the median**. Children with less than 80 percent weight-for-height or with a Z-Score of less than -2, are classified as malnourished; those with less than 70 percent weight-for-height or with a Z-Score of less than -3, are considered severely malnourished. Without special feeding programs, these children will die.

Another method used when a rapid screening of young children is necessary is the mid-upper-arm circumference (MUAC) measurement. It is less sensitive than the weight-for-height method but

can be done more quickly. This measurement technique is described at the end of this section

### 3. General Feeding Program

Every effort should be made to provide familiar foodstuffs and to maintain sound traditional food habits. Expert advice on the appropriate food ration is essential and should take full account of local availability. Staple foodstuffs should not be changed simply because unfamiliar substitutes are readily available. Unfamiliar foods often lead to wastage and malnutrition, and lower the morale of the population.

*The amount and quality of food provided must satisfy energy and protein requirements. A Survival Ration should provide at least 1900 Kcal (and 50 g of protein) per person per day. This is based on a population composed of 20 percent less than 5 years of age, 35 percent 5–14 years of age, 20 percent females 15–44 years of age, 10 percent males 15–44 years of age, and 15 percent of the population over 44 years of age. Active adults may require considerably higher energy intakes, especially if part of the relief plan includes a Food-for-Work Program. Although there is a marked difference between the needs of a young child and an active adult, it is strongly recommended that a standard ration be provided for each displaced person without distinction. A typical daily ration providing sufficient calories and protein should include:*

- a staple food which provides the bulk of the energy and protein requirement (e.g., cereal 350-400g)
- an energy-rich food (e.g., oil 20-40g).
- a protein-rich food (e.g , beans 50g).

*Examples of 1900 kcal daily rations and enhanced rations are located in tables 4 and 5 at the end of this chapter. Located in table 6 is a quick reference matrix for calculating the amount of food needed for displaced populations (500 grams per day), for various time periods.*

If grains must be milled, the population will require an increased ration, because a portion must be given to the miller and because of loss during milling. Vitamin B is also lost in the milling process.

Other items such as vegetables, sugar, spices, condiments, fruits, and tea should be provided according to cultural and nutritional needs, if possible. However, absolute priority must be given to the delivery of the staple food. *The assured delivery of a few items is better than a complex ration, some of which may fail to arrive.*

*Essential vitamin and mineral requirements must also be met.* Where adequate quantities of certain nutrients cannot be provided in the diet, the inclusion of seasonally available vegetables will usually prevent vitamin and mineral deficiencies. When possible, the population should be encouraged to grow home gardens of vegetables for personal use. Local food markets should also be encouraged.

Particular attention must be paid to vitamin and mineral deficiencies prevalent in the local area. Two deficiencies are commonly seen among displaced people: vitamin A deficiency and anemia. *Vitamin A deficiency in malnourished populations, especially children, leads to blindness. Anemia is commonly associated with parasitic diseases or an insufficient intake of iron and folate.* In the most severe cases, it can lead to cardiac failure and death. Both are preventable with a proper diet. Efforts must be made to include food items which are rich in the needed nutrients. However, the distribution of multivitamin tablets to the entire population is a waste of time and money, since such tablets contain insufficient quantities of the vitamins required to correct deficiencies. Also, the logistics of distributing these tablets is labor-intensive. However, vitamin A should be given once every four months to all children under 5 years of age. Children from 1–4 years of age should receive the equivalent of 200,000 units (usually one capsule), and infants less than 12 months old should receive one-half of a capsule.

*The need for a fair, efficient, and regular ration distribution cannot be overemphasized.* Normally, rations are issued in 7 to 14 day intervals. Distribution intervals must be constantly reviewed based on continued assessment of the displaced population. An accurate census is needed and a monitoring system must be established to ensure that the food is actually reaching every person as intended. Some waste, diversion, and corruption is inevitable, but if these problems are severe they may lead to discontent and unnecessary suffering by the population.

#### **a. Types of Food Distribution**

There are two types of food distribution—dry rations and cooked or “wet” rations. Whichever is used, it is important that those distributing the food have exact instructions on the size of the rations. If scales are not available or become an inconvenient way to measure out food, cans or containers with a known weight/volume comparison for each commodity should be used. *The distribution of food as prepacked rations is an unsatisfactory solution and should be avoided.*

### **(1) Dry Ration Distribution (Take Home)**

This method has major advantages over cooked food distribution. Dry ration distribution allows families to prepare their food as they wish, permits them to continue to eat together as a unit, and is generally more culturally and socially acceptable.

Distribution is usually made at 7–14 day intervals. Where an accurate census is available and families have food distribution cards, some form of group distribution is possible. A designated family member or group leader becomes responsible for distributing the food. This method is fast and relatively easy to monitor. In the initial stages however, the best way to guarantee a fair distribution may be to have every individual present.

The food distributor is responsible to the people and/or camp authorities. A standard measure (e.g., can) should be used for distribution. Each person should understand how much he/she will receive.

Groups should remain fixed to a piece of ground when they first register to prevent multiple registrations. Simultaneous food distributions will prevent people from moving from one distribution session to the next.

In addition to cooking pots, fuel, and utensils, displaced people must have containers and sacks (e.g., empty cooking oil tins and grain sacks) to protect and store their food rations. Depending on the type of food distributed, there may be a need for grinding and milling facilities.

Food distribution to dispersed populations may present problems. For example, if the displaced camp is located in a food-deficit area, the local population may become intermingled with the displaced population. The local government may try to prevent a census that might cause the local people to be excluded from the food distribution. One solution to overcome this problem is to have the traditional leaders of the displaced population do the distribution. Another solution is to have a separate food distribution system in the local community located away from the displaced settlement. This should keep the local population out of the settlement. While it will cause a certain diversion of commodities, this is an acceptable loss considering the alternatives. Food distributions may also interfere with original planning assumptions. If the affected population is in a village, it may have access to other food sources. Relief managers should take this into account and only provide a portion of their food requirements.

In providing food to dispersed populations, one must be very careful not to destroy local markets and marketing systems. Two methods for food distribution can be used: providing food directly or using the food-for-work or cash-for-work methods. There can also be village-based or nutrition-based distributions. The village-based method counts the number of people requiring food, determines the amount of food needed, and then gives that amount to everyone. This method is easy but expensive because there is no targeting. There are also problems for the local market, and these programs are difficult to end. Nutrition-based food distribution programs target distribution and then decrease as the area's nutrition level improves. Although this is a good system, it is complicated and staff-intensive. It requires home visits, good records, and nutrition monitoring equipment and trained people to administer the program.

## **(2) Wet Ration Distribution**

This method requires centralized kitchens with adequate utensils, water, fuel (although obviously less than the amounts required for family cooking), and trained, healthy personnel. At least two meals must be provided per day, and the efficient organization of wet ration distribution for large numbers is difficult. Such distribution may be necessary during the initial stages, especially when families have insufficient cooking utensils or fuel.

The quality and quantity of rations should be discussed regularly with the displaced people and complaints should be investigated. It is also important to check that food is being properly distributed and used at the family level. Nutrition education can help with some problems and may prevent improper storage or spoilage. This is especially true if the population is not accustomed to the food. Arrangements should also be made for the inspection of food supplied by contractors.

## **4. Supplementary Feeding Programs (SFP)**

When malnutrition exists or the needs of vulnerable groups of infants, children, pregnant and lactating women, the sick, and the elderly cannot be met from the general ration, special arrangements are required to provide extra food. This is organized through the SFP. The vulnerability of these groups stems from the increased nutrient requirements associated with such factors as growth, the production of breast milk, repair of tissues, and production of antibodies. Because children are unable to eat a large volume of food, it is necessary both to prepare food in a concentrated form, giving them more nutrients in less volume, and to provide more frequent meals. Malnutrition results in lower resistance to infection, which in turn results in further malnutrition.

Small children are particularly susceptible to the cycle of infections and malnutrition. *Sick children must eat and drink*, even if they have no appetite, are vomiting, or have diarrhea. *They must receive additional food whenever possible.* If the percentage of children malnourished is 5–10 percent, a selective SFP should be considered for them and for vulnerable groups. If the percentage of children malnourished is 0–5 percent, a program specifically for the malnourished should be started, but not a general SFP.

An SFP requires strong advocacy among the population. Its purpose must be clearly understood, otherwise some will question why the weak and sick are being fed when there are children who are healthy and need food.

Factors to consider when determining the need for an SFP include:

- General ration averages less than 1500 Kcal/person/day.
- 10–20 percent of the children are malnourished (children under 5 years old under 80 percent weight-for-height).
- Severe public health hazards exist.
- Significant diseases, especially measles, are prevalent or imminent

*The aim of an SFP is to provide extra high energy, high protein, low bulk extra meals once or twice a day to those who need it.* The number of meals depends on the nutritional status of the population, the nutritional value of the general ration, and the age of the beneficiaries. The size of the supplement also depends on the nutritional status of the beneficiaries. However, at least 350 Kcal and 15 g protein per day should be provided.

Supplementary meals should be prepared as porridge or soup, which are easily digestible and can be eaten by people of all ages. The food is generally based on cereal and legume blends with edible oil added to increase the energy content. Other ingredients (e.g., sugar, vegetables, fish, milk) can be added to provide additional nutrients and a variety of flavor. There are some prepacked cereal/legume blended meals available through U.N. agencies (e.g., *CSM (corn-soya-milk)*, *WSB (wheat-soya-blend)*, etc.) that may be useful at the start of an emergency feeding program if ingredients are familiar to the population. However, local foods should be substituted as quickly as possible and prepared in a more traditional and appropriate way.

*SFP's must be based on the active identification and followup of those considered vulnerable* This requires a regular house-by-house or family-by-family assessment, usually made by public health workers operating through a referral system. In addition to encouraging those in need to participate in the SFP and ascertaining the reasons for non-participation, continued home-visiting is required to monitor the progress of infants and children. Those identified for the program should be registered and issued a numbered identity bracelet or card to facilitate followup. An SFP that does not actively identify those in need, but operates on an open "come-if-you-wish" basis, is unlikely to benefit those in greatest need and is a very poor use of food and organizational resources

*The criteria for admission to an SFP will depend on the condition of displaced people and resources available. The SFP order of priority is:*

- any malnourished person (less than 80 percent weight-for-height WHO International Reference or a Z-Score of less than -2).
- young children (less than 5 years old or 115 cm in height).
- women during the last 3 months of pregnancy and the first 12 months of lactation.
- medical referrals and the socially vulnerable.

Should restrictive selection be necessary due to a lack of resources, the nature of the program will change from preventive to curative.

Children should not be discharged from the SFP until they have maintained more than 85 percent weight-for-height for at least 1 month.

Once begun, SFP's must be considered necessary until an appropriate general ration is provided that meets the needs of the vulnerable and as long as living conditions remain hazardous. *SFP's should not be discontinued unless surveillance results reflect sustained improvement and less than 5 percent of the children remain malnourished.* As children improve, they should be excluded from the program. Otherwise, the SFP becomes too large and unmanageable, and parents may regard the SFP as a routine, not specially targeted, program.

The amount of food required for supplementary feeding is approximately 3 metric tons per 1,000 beneficiaries per month. This is illustrated in the chart below.

**SUPPLEMENTARY FOOD QUANTITIES**  
**Typical Daily Ration**

Item	Amount (gm)	Energy (kcal)	Protein (gm)	Monthly Amount*
Cereal	60	210	6	1.8
Oil	10	90	—	0.3
DSM**	25	90	9	0.75
Sugar	5	20	—	0.15
<b>Total</b>	<b>100</b>	<b>410</b>	<b>15</b>	<b>3.0</b>

\* Monthly amount for 10,000 in metric tons (Daily x 30 x 1,000)

\*\*Dried skim milk (See point 6 **Infant Feeding and Milk Products**).

An effective SFP program requires the regular attendance of all those registered. The identification of those in need is a prerequisite, to be followed by careful control of attendance and progress. Trained staff should weigh and measure children on admission to the SFP and reweigh them monthly to monitor individual progress.

The SFP can be organized using either the "take home" or "on-the-spot" method. Both require careful registration and control. The take home system is relatively simple to administer, but the food supplement is likely to be shared within the family. On-the-spot feeding is the preferred method. Supervision is improved and the intended beneficiary is witnessed eating the correct amount of food. Also followup is easier, as those in need are seen more often and under more controlled conditions.

Any SFP must be closely integrated with a community health care program, since the SFP will identify health problems. Certain daily medications (e.g., iron, folate), may best be given in the course of the supplementary feeding.

Feeding centers and kitchens must be well organized and kept clean. Long waiting periods must be avoided and the schedule must not clash with family meal times or other essential community activities. Mothers may have to be fed with children to ensure that vulnerable children receive special feeding. *Parents must be*

*made to understand that the SFP is given in addition to the normal meal.* Otherwise parents will think that young children are fed at the center while older children must eat at home. Utensils, bowls, scales, fuel, water, storage facilities, and other equipment will be required and can generally be obtained locally. Some of these supplies are available with an *OXFAM Feeding Kit*, which includes 300 plastic plates, 300 plastic cups, 2 jerry cans, 4 buckets with lids, 50 spoons, 2 can openers, 1 large pot, 1 small pot, 2 ladles, 2 mixers, and a guide book. The kit does not contain a cooker.

One SFP center can usually handle up to 500 beneficiaries. The centers should be run by trained displaced people. An experienced nurse should be able to supervise four to five centers. If different organizations establish separate SFP centers, central coordination and standardized procedures for all centers are very important. Programs must avoid depending on outside assistance to prevent their collapse when individuals or organizations leave.

### **5. Therapeutic Feeding Programs (TFP)**

Therapeutic feeding reduces deaths among infants and young children with severe protein-energy malnutrition (PEM). (The forms of PEM are described at the end of the food and nutrition section). If severe PEM exists, therapeutic feeding will be the priority method to save lives. However, if the startup of an SFP is delayed because resources, particularly trained personnel, are concentrated on a TFP, there may be a sudden deterioration in other less-malnourished children. The life-saving achievements of a TFP will be overtaken by the life-threatening consequences of not having an adequately functioning SFP benefiting more people.

*Food is the treatment for PEM.* Unlike SFP's, TFP's are used solely for curative measures and should only be administered as short-term programs. The need for its continuation will depend on the effectiveness of general and supplementary feeding programs as well as the nutritional conditions of new arrivals.

The usual criteria for admission to a TFP is if an individual suffers from edema (kwashiorkor), or severe marasmus (weight-for-height less than 70 percent or a Z-Score of less than -3). Patients should remain on a TFP until they are free from illness, at least 80 percent of weight-for-height, and without edema. Only upon recovery would patients be discharged to the SFP.

Therapeutic feeding should take place on an in-patient basis whenever possible, as food must be given every 3–4 hours. Infection and dehydration are the major causes of death. Patients must be closely watched for medical complications. If weight does not increase quickly on a properly run TFP, it is likely that the individual also has an illness which must be treated. *The immunization of children against measles is a priority due to the high mortality associated with this disease in a malnourished population.* All children admitted to a TFP should be given a full course of Vitamin A, with doses on days 1, 2, and 7 of admission.

TFP's must be run by experienced and qualified personnel. One center can usually handle about 50 children and will require two experienced supervisors working full-time. Doctors and nurses with little training in nutrition or experience in treating severe PEM must be given necessary guidance. Displaced people and mothers of patients, in particular, should be involved in running the therapeutic feeding center.

*TFP for PEM consists of a diet of at least 150 Kcal and 3–4 g of protein per kilo body weight per day for each patient. This is administered during 5–7 meals at 3–4 hour intervals throughout a 24 hour period.* Boiled water mixed with a dried skimmed milk/oil/sugar mixture, or with a UNICEF K Mix II/oil mixture, can be used to initiate treatment. A mixed diet is introduced once the patient's condition starts to improve (usually after 4–5 days).

## 6. Infant Feeding and Milk Products

*Human milk is the best and safest food for infants and children under 2 years of age.* Breast feeding also provides a secure and hygienic source of food, as well as antibodies that protect against some infectious diseases. *Therefore, every effort must be made to promote lactation, even among sick and malnourished mothers.* In some cases, mothers may need to receive extra food to encourage breast-feeding and provide the additional calories and nutrients required. This should be done through the SFP.

Problems associated with using infant formula and feeding bottles are exacerbated in a displaced population situation. Clean, boiled water is essential but rarely available to dilute the formula. Careful dilution of the formulas is also difficult to control as mothers are unlikely to be familiar with the use of infant formula and instructions are often in a foreign language. Infant formula, if unavoidable, should be distributed from health or feeding centers under strictly controlled conditions and proper supervision. *Infant feeding bottles must never be distributed or used, they are almost*

impossible to sterilize and to keep sterile under such conditions. *Babies should be fed by a clean cup and spoon if necessary.*

*Milk should not be distributed if it is not a traditional part of the displaced people's diet.* Some populations may even have a lactose (milk sugar) intolerance.

The use of dried milk powder also has major practical problems. Both hygiene and proper dilution is difficult to ensure. Also, powdered milk mixed with unsafe water or exposed to dust or flies can easily become contaminated and provide an ideal environment for bacterial growth. For these reasons *milk should not form part of the general ration*, unless milk was used as a normal source of protein for the displaced population.

In addition to infant formula, products commonly offered in emergencies include dried whole milk (DWM), dried skimmed milk (DSM), sweetened and unsweetened condensed milk, and evaporated milk. Their appropriateness must be ascertained before acceptance. *It should be noted that all DSM supplied from U.S. sources is vitamin A fortified, however, the vitamin A in any DSM, has a shelf life of 6 months.*

*Milk products are useful in SFP's and TFP's* when administered under supervision and controlled and hygienic conditions. For example, milk can be added to SFP cereal mixtures to boost their protein content. Milk powder is the usual basis for early stages of treatment in therapeutic feeding.

## **7. Basic Facts About Food and Nutrition**

### **a. Nutrients**

Foods are made up of *five basic types of nutrients*: carbohydrates, fats, proteins, vitamins, and minerals. *Carbohydrates* are a source of energy and consist mostly of starches and sugars of vegetable origin, such as cereals and tubers. *Fats and oils* provide the most concentrated source of energy, having more than twice the energy content per weight of carbohydrates and proteins. In most poor countries, most energy is derived from staple foods, especially cereals, with fats accounting for a much smaller portion. *Proteins* are body-building substances required for growth and tissue repair. Protein is found in foods of animal origin, cereals, and legumes. *Vitamins and minerals* are needed in small quantities for the adequate functioning of the body. Individual vitamins and minerals, or combinations are found in all foods in variable amounts.

## **b. Energy and Protein Intakes**

If the energy intake is inadequate, some protein in the body will burn to provide energy instead of promoting body growth or repair. That is, it will be used in the same way as carbohydrates or fats. No less than 10 percent of the energy requirement should be supplied from fats and oils, even though they greatly enhance the palatability of the diet and increase energy density, which is important for younger children. Energy requirements vary widely, even among normal individuals, and increase with physical activity. *Much higher intakes are required for the treatment of malnutrition, when the aim is rehabilitation rather than maintenance. (A chart listing approximate nutritional values of various commodities is located in table 7 at the end of this chapter.)*

## **c. Food and Diets**

Diets in most countries contain adequate amounts of nutrients required for good health *if enough of the diet is taken to satisfy the individual's energy requirements.* Even a growing, healthy child requires no more than 10 percent of the calories to be supplied from protein sources.

### **(1) Protein-Energy Malnutrition (PEM)**

PEM is a problem in many developing countries, even under normal conditions. In most cases, PEM affects children between the ages of 6 months and 5 years (especially at the time of weaning). Severe PEM is usually precipitated by low food intake associated with infection. Displaced people are particularly vulnerable to PEM. *PEM has three forms which are described below.*

**Nutritional Marasmus** is the most frequent form of PEM in cases of prolonged food shortage. The main sign is a severe wasting away of fat and muscle that have been expended to provide energy. Affected children become very thin, may have an "old man or old woman" face, and loose folds of skin. However, they may appear relatively active and alert.

**Kwashiorkor** is seen most commonly in areas where the staple food is mainly carbohydrate, such as tubers and roots like cassava. It is precipitated, however, by many factors other than protein deficiency. The main sign of kwashiorkor is edema, a swelling that usually starts at the lower extremities and extends in more advanced cases to the arms and face. Edema must be present for the diagnosis of kwashiorkor but can also occur in other diseases. Where there is gross edema, the child may look

"fat" and be regarded by the parents as well-fed. Associated signs of kwashiorkor, which do not always occur, include hair changes (color becomes lighter, curly hair becomes straight, comes out easily with a gentle pull) and skin changes (dark skin may become lighter in places, skin may peel off, especially on the legs, and ulcerations may occur). Children with kwashiorkor are usually apathetic, miserable, withdrawn, and often refuse to eat. Profound anemia is a common complication of kwashiorkor.

**Marasmic Kwashiorkor** is a mixed form of PEM, with edema occurring in children who are marasmic, and may or may not have other associated signs of kwashiorkor. Mixed forms will often be seen.

## **8. Rapid Assessment of the Nutritional Status of Young Children Using the Mid-Upper-Arm Circumference (MUAC) Method**

### **a. Explanation**

The MUAC technique is used to rapidly assess the nutritional status of young children. It measures the part of the arm whose circumference does not normally change significantly between the ages of 1 and 5, but which wastes rapidly with malnutrition. The technique is not suitable for monitoring the progress of individual children.

Professional help should be used for the arm circumference method. If professional help is unavailable, assessments can be done by those without previous experience by using the guidelines below.

### **b. Selection of the Children**

If the displaced person population is 10,000 or less, a random sample of no less than 200 children aged between 1 and 5 years should be selected. This can be done on a house-to-house basis or by assembling all the children at one camp and then measuring every fifth child. If a "cluster" sample method is used (i.e., sampling different sections of a large settlement), no less than 30 children per cluster should be measured to allow a comparison between sections. Take care that adults do not produce sick children in the belief that the test is to be followed by medical attention, as this will distort the result. A quick but crude way of ascertaining that children selected range between 1 and 5 years, is to verify that they have more than six teeth but stand less than 115 cm in height. For most people, this would mean the children come up to about waist height.

The assessment must be put in context, as the condition of this particular group may not reflect that of the whole caseload. It is important, therefore, that information be reported about where the children come from and when they arrived

### c. The Measurement

Before being measured, the child should be checked for edema, the swelling associated with kwashiorkor. This is done by pressing a finger against the front of the child's foot for about 3 seconds. A dent, (pitting) indicates that the child has edema, and therefore should not be measured. It should be recorded that the child has edema and is severely malnourished.

If there is no sign of edema, the mid-upper-arm circumference of the child should be measured, using a custom-made measuring tape. The tape should be wrapped closely, but *not* tightly, around the arm, midway between the elbow and the point of the shoulder. The arm should be hanging loosely, with the tape measure circled around the arm. The tip should be inserted back-to-front through the narrow slit at the white end of the tape. The arm circumference should be read to the nearest 0.1cm between the vertical arrows at the center of the large opening. The arm circumference of normal children between 1 and 5 years of age changes very little. Therefore, children of these ages can be included in a nutrition survey using the same standards.

The arm circumference tapes have colored bands representing different nutritional states

Status	Arm Circumference	Color
Normal	13.5cm or greater	Green
Mild Malnutrition	12.5 to 13.4cm	Yellow
Moderate to Severe Malnutrition	Less than 12.5cm	Red

If custom-made measuring tapes are not available, a thin strip of plastic (about 30 cm in length) should be used with marks clearly indicated at the zero point, 12.0 cm, 12.5 cm, and 13.5 cm.

### d. The Results

Each arm circumference has an approximate equivalent to a weight-for-height percentage. They are:

13.5 cm or greater approximately equivalent to over 85 percent weight-for-height.

12.5 to 13.4 cm approximately equivalent to 80–85 percent weight-for-height

Less than 12.5 cm approximately equivalent to under 80 percent weight-for-height.

The amount and degree of malnutrition can be calculated as percentages of the sample. Also reported is the percentage of children with edema (kwashiorkor).

## **E. Health**

### **1. General**

Health services provided to displaced people should be based on the concept of primary health care. This strategy strongly emphasizes preventative rather than curative care, since curative care places a much heavier burden on response resources. The majority of the population is generally more influenced by public health measures than by individual care.

The exception to the rule of emphasizing preventative care over curative care occurs in sudden onset disasters, such as earthquakes or during civil strife disasters, where there can be initially, a significant need for trauma care within the population. Positions are identified within the DART and can be filled as needed to deal with trauma care situations

The level of health care provided will be determined by the condition of the displaced people and resources available. In theory, the peak of curative medical care should be during the early stage. This is when displaced people are most vulnerable to their new environment and before it has been possible to complete any major public health improvements in the sectors of shelter, water supply, and sanitation. In practice, however, the medical staff often arrive later and begin to build up curative services at the same time that the overall health status of the displaced people is improving, if the emphasis is placed instead on preventive care. Once immediate health problems are controlled, the level of health care provided should be appropriate for the local population and at a level that can be maintained. Services and levels of care available to the displaced people should be standardized.

## 2. Initial Health Assessment and Mortality Rates

The aim of the initial health assessment is to identify mortality rates, morbidity rates, and health needs and to establish response and recommendations and priorities.

### a. Mortality Rate

The *mortality rate* (death rate) is the single most important indicator of serious stress (e.g., illness, malnutrition) in a displaced person population. Knowing the causes of death is crucial since it helps set priorities for appropriate relief interventions. In addition, deaths are indicators/events of obvious interest and concern to the displaced population, relief administrators, and the media.

In displaced populations served by well-run relief efforts, overall *mortality rates should not exceed 1.5 times those of the host population*. An elevated mortality rate signals an ongoing problem and should prompt an immediate investigation of the situation. In general, even initially high mortality rates should fall to or below 1 per 10,000 per day within 4–6 weeks of beginning a basic support program that provides sufficient food, water, immunization, simple health care, and other immediate needs. Rates above that level should be a cause for concern. *Mortality rates exceeding 2.0 per 10,000 population per day indicate a serious situation*. Immediate actions should be taken.

Because the number of deaths fluctuates from day to day, death rates should be calculated over an extended period, ranging from 1 week to a month. For example, take the number of deaths occurring each day over a 7-day period and average the total; the resulting average daily number is used in analyses. Since it may be difficult to determine the total population, a sample size of 20–30 families is recommended. Surveys of death rates should be conducted on a regular basis. *Remember, in an emergency the critical task is to get the death rate down. It is also the measure by which the effort will be judged!*

#### Procedures for calculating mortality rates

$$\text{Mortality Rate} = \frac{\text{Number of deaths} \times 10,000}{\text{Number of days} \times \text{population}} = \text{Deaths}/10,000/\text{day}$$

Example. If 21 deaths have occurred over a 7-day period in a displaced population of 5,000 people, the death rate would be calculated as follows:

$$\text{Death Rate} = \frac{21 \times 10,000}{7 \times 5,000} = \frac{210,000}{35,000} = 6$$

which is expressed as 6.0 deaths per 10,000.

To convert to the number of deaths per 1,000, which is the preferred method of some public health personnel and epidemiologists, divide the rate above by 10. For example, 6 divided by 10 equals 0.6 deaths per 1,000 per day.

## **b. Health Assessment**

Factors contributing to health or disease in the displaced population must be determined by establishing the pattern of disease, the effect of cultural and social influences on the population's health, and the effectiveness of any existing health services.

The key to an effective assessment and surveillance program is good information. Information can be collected by observation or from health workers. Sample surveys reveal symptoms and disease patterns and indicate distribution in the community. When possible, mass screening on arrival is the most effective method, and can sometimes be conducted at a camp during the registration process.

The initial assessment should be done by field experienced persons who have an understanding of epidemiology. If OFDA takes on this responsibility, it normally requests these services from the Centers for Disease Control in Atlanta.

A centrally coordinated surveillance system must be established quickly to identify problems in time for preventative action. For example, the incidence of diarrheal diseases may be an important indicator of environmental problems.

Records on individuals and on the community as a whole serve important purposes. Individual record cards are used for recording immunizations and the treatment of illnesses. These cards should be kept by the displaced person, and in the case of young children, by the mother. Experience shows that these cards are generally well-cared for by their owners.

Community reporting has a different purpose. It is an essential tool for the planning of services and monitoring of disease patterns. National health authorities may also require specified "notifiable" communicable diseases to be reported at once.

To be fully effective, surveillance requires rapid access to laboratory services. Very simple lab services at the camp level are usually adequate.

### 3. Disease Control

The risks of communicable (infectious) diseases are increased by overcrowding, poor environmental conditions, and the often poor initial state of health of the population. The infectious organism, however, must first be present to spread. For example, if no one is carrying typhoid, it will not suddenly appear.

Measures to improve environmental health conditions are, therefore, very important. These measures include providing enough safe water, soap, proper disposal of excreta and garbage, controlling rodents and vectors, and educating the population on general public health issues.

#### a. Immunizations

*The only immunization required during the early weeks of an emergency is for young children against measles. This is a high priority even when resources are scarce.* All other necessary immunizations (e.g., diphtheria-tetanus-pertussis (DTP), polio, and BCG (tuberculosis)) should be given later, once facilities allow, and to the extent possible within the framework of the government's own expanded program of immunization (EPI).

In displaced person situations, rumors of epidemics in camps often are rampant. Rumors should be confirmed by responsible experts, and information disseminated to the displaced population.

Infections that cause much disease and death in displaced person camps are often aggravated by malnutrition. These infections cannot be effectively prevented by mass immunization programs, and the programs are labor intensive and require controlled handling and careful supervision.

The chart below illustrates immunizable diseases that might be present during a displaced person emergency situation, the relative value of an immunization program for each disease, and the age group target for each type of immunization program.

It should be remembered that vaccines *prevent* diseases; they do not cure them. Therefore, these diseases must be anticipated and detected early.

<b>Disease</b>	<b>Name of Vaccine</b>	<b>Usual Utility for Displaced Persons</b>	<b>Appropriate Ages</b>
Measles	Same	++++	Under 5 yrs
Polio	Same	+++	Under 5 yrs
Diphtheria	DTP	++	Under 5 yrs
Pertussis	DTP	++	Under 5 yrs
Tetanus	DTP	++	Under 5 yrs
Tuberculosis	BCG	+	Under 1 month
Cholera	Same	0	
Typhoid	Same	0	
Meningococcal Disease	Same	Use only in outbreaks	

### **b. Common Diseases**

The most common symptoms and diseases among displaced people are those normally to be expected in any community in a developing country. diarrhea, measles, nutritional deficiencies, respiratory infections, malaria, parasites, and anemia. However, crowded conditions among the displaced people are likely to increase the occurrence of these diseases, in particular diarrhea. Diarrhea, due to the new environment, overcrowding, and poor environmental services, usually poses the major threat to displaced people's health in the first weeks of living in a camp. It remains a major health risk should there be a sudden deterioration in some aspect of the communal services, such as contamination of the water supply

The following provides information on diseases common to displaced person emergency situations. It includes information on the symptoms, transmission, and possible curative and/or preventative measures that can be introduced for these diseases.

An important point to note is that among the diseases listed, 80–90 percent of all deaths in displaced populations are caused by five killer conditions: malnutrition, measles, acute respiratory infections, diarrheal diseases, and malaria

#### **Acute Respiratory Infections (ARI)**

ARI's are caused by a variety of viruses and bacteria. They are marked by cough, fever, and shortness of breath. They may be

mild or may progress rapidly to death, especially among malnourished children. ARI's are favored by cold rain, inadequate blankets and clothing, poor ventilation, and crowding. The best preventive strategy is to provide adequate space, shelter, clothing, blankets, and ventilation. For severe cases, the treatment is antibiotics.

## **Cholera**

Cholera is an acute intestinal disease characterized by sudden onset of profuse watery stools with occasional vomiting. In some cases, diarrhea can be so severe that it can lead to dehydration and even death. Many infected individuals, however, have mild diarrhea or even no symptoms at all. The recommended treatment is rehydration with appropriate electrolyte solutions, by mouth if possible.

Transmission occurs through ingestion of water contaminated with feces. To a lesser extent, food contaminated by water, soiled hands, and even flies can spread the disease. Person-to-person spread generally does not occur.

The incubation period for cholera is usually 2–3 days, but can be from a few hours to as long as 5 days.

Patients generally carry the cholera bacteria in their stools only while they are having diarrhea and for a few days after recovery. Although long-term carrier states have been described, incidence is quite rare.

A cholera vaccine is available but current vaccines provide protection in only about 50 percent of vaccinees and protection lasts only a few months. Also, initial immunization requires two doses of vaccine given 4 weeks apart, which precludes its use during outbreak situations.

If cholera is suspected, the following measures should be taken:

1. Report suspected cases to national public health authorities.
2. Confirm the diagnosis by culturing stool samples from suspected cases. Regional public health laboratories or a hospital lab in the capital city should be able to help confirm this diagnosis by testing the samples.
3. Check the hygiene loop to be sure water is safe and is protected from sewage contamination (the source of the infection in most cases).
4. *Vaccine does not prevent the spread of the cholera organism!*

## Diarrheal Diseases

Diarrheal diseases are the most common fatal childhood diseases worldwide. *Malnourished individuals are particularly prone to diarrhea. Complications among young children can result in dehydration and shock. If untreated, it is frequently fatal in already malnourished children.* Diarrhea is transmitted through contaminated food and water. There are several diseases that manifest as diarrhea, e.g., dysentery (viral, bacterial, and amebic), shigella, and giardia.

Antibiotics rarely affect the course of childhood diarrheal illnesses. Diarrheal diseases generally are self-limited and, if fluids and electrolytes (water, salt, bicarbonate, potassium, etc.) can be replaced by mouth, the illness will run its course and the patient will survive. While packets containing the proper mixture of electrolytes (*oral rehydration salts, (ORS)*) are available, homemade fluids containing the most important minerals can easily be produced (see "3" below).

If diarrhea other than cholera or typhoid is suspected to be a major problem, the following measures should be taken:

1. Confirm prevalence of problem by reviewing morbidity and mortality data. Additional information, such as location of patients in the camp, the length of time in the camp, and the source of family water supplies, can help pinpoint the source of infection.
2. Check the adequacy and purity of water supply to determine if there is any actual or potential contamination of water supplies by human feces.
3. Stress importance of oral rehydration therapy. If packets containing the proper mixture of electrolytes are not available, the most suitable fluid is a sugar-salt solution containing the following ingredients in 1 liter of water:

(a) Sodium chloride (table salt)	3.5 grams
(b) Sodium bicarbonate (baking soda)	2.5 grams
(c) Potassium chloride	1.5 grams
(d) Glucose (sugar)	20.0 grams
4. Intravenous fluids are rarely preferable to oral rehydration.

## Diphtheria (D), Tetanus (T), Whooping Cough (P=pertussis)

Diphtheria is generally not a problem in tropical countries. It is usually characterized by a patch or patches of a grayish membrane in the throat.

**Tetanus** is a severe infection characterized by painful muscular contractions especially of the jaw and neck muscles. In developing countries, this disease is almost always fatal.

Tetanus is transmitted through spores introduced into the body during injury, usually a puncture wound contaminated with soil or feces, but also through burns and trivial wounds. Neonatal (infant) tetanus continues to occur in large numbers in developing countries because of unsterile cutting of the umbilical cord or ritualistic covering of the cord stump with unsterile items (e.g., cow dung). *Tetanus can not be transmitted person-to-person*

The incubation period is about 10 days for tetanus.

**Whooping Cough (pertussis)** is a bacterial disease common in children throughout the world. It begins with a runny nose and an irritating cough. The cough gradually becomes worse over 1–2 weeks and lasts for 1–2 months. Whooping cough can be a severe disease and fatal, especially in non-immunized malnourished children less than 1 year of age.

Diphtheria and whooping cough are transmitted through the air from respiratory secretions of infected patients

The incubation period for both can last from 7–10 days

The period of communicability is the first 3 weeks of illness.

DTP (diphtheria-tetanus-pertussis) vaccine is available and highly protective against these three diseases. The vaccine must be given in three separate injections at least 4 weeks apart. Vaccine can be given as early as 1–2 months of age. DTP vaccinations can be delayed until after the emergency phase of a displaced person operation. An essential part of a tetanus vaccination program is administering two doses of tetanus toxoid vaccine to women in their last 4 months of pregnancy (who should receive two doses 4–6 weeks apart).

There is a high incidence of minor reactions to the DTP vaccine, especially to the pertussis component. These reactions, which are generally of short duration and not serious, include fever, muscle aches, irritability, and aching at the site of injection.

### **Intestinal Parasites**

Intestinal parasites are extremely common in developing countries. A majority of the population can be infected with one or

more parasites, of which the most common are usually hook-worm, *Ascaris*, giardia, and *Trichuris* (whipworm). Many of those infected will appear perfectly healthy, but fever, anemia, abdominal pain, vomiting, and exacerbation of malnutrition can occur with heavy infestations. These parasites are usually transmitted when walking barefoot step on soil contaminated by feces. Intestinal parasites are not spread from person-to-person.

Intestinal parasitic infections should assume a *very low priority* in the emergency phase of a displaced persons operation. Because re-infestation after treatment is an indicator of poor sanitation, correction of sanitary deficiencies is likely to abate the parasite problem and other more serious diseases.

If parasites are a problem, the following measures should be taken.

1. If a laboratory is available, survey children to determine the prevalence of infection and the type of parasite involved
2. Once several malnourished children begin to recover, treat them for possible worm infestation.
3. Check for adequate facilities for the proper disposal of feces immediately adjacent to shelters or houses, particularly in children's play areas.
4. Promote health education, and encourage displaced people to use latrine facilities.
5. Longer-term parasite control efforts must include health education and the wearing of shoes or sandals. Control programs based on drugs alone do not work.

## Leprosy

Leprosy is a chronic infectious disease characterized by progressive deterioration of skin and occasionally other tissues. Despite adequate treatment that is now available, leprosy still carries serious social stigma in many cultures. Leprosy primarily occurs in tropical regions and in the lowest socioeconomic groups. The incubation period for leprosy is 1–20 years, but 90–95 percent of those “infected” never develop any manifestations of the disease.

In most displaced person camps in developing countries, a few cases of leprosy may be encountered. Identified cases should be treated. However, since *leprosy is a chronic disease and is not very contagious*, low priority should be given to identifying new cases and establishing a control program, especially in the early phases of an emergency. But because of the social stigma attached to the disease, efforts may be needed to calm the fears of other displaced people and workers in the camp.

## Malaria

During the last decade, malaria has had an upsurge in many developing countries. This is due to the decreased number of mosquito control programs and an increased resistance of the malaria parasite to the usual treatment. There are four types of malaria, but *vivax* and *falciparum* are the most common. *Vivax* is generally not a life-threatening disease, but *falciparum* can be rapidly fatal and requires prompt treatment. The usual symptoms of malaria are fever, chills, headache, and sweats that can progress to kidney and liver failure, shock, and even coma. In an area known to have *falciparum* malaria, fever, and delirium, disorientation or coma should be assumed to be malaria and treated promptly.

Those who have already been exposed to malaria have some immunity to the disease and may either remain without symptoms or have a mild attack if re-exposed to malaria. The major threat to health arises in non-immune populations who may be forced to flee from a setting where malaria is not a problem (especially urban areas), to jungle, swamps, or other areas where malaria transmission is occurring and where they can contract the disease.

If malaria is suspected, the following measures should be taken:

1. **Attempt to confirm the diagnosis.** Blood smears on suspect cases should be taken. They are simple to do and, if a microscope is available, local medical technicians can confirm the diagnosis. If laboratory confirmation is not available, *assume that recurrent fever, chills, and headache in a malaria area is malaria* until proven otherwise.
2. **Assess the risk of disease.** Ask if the displaced people originally lived in an area where malaria was a problem. They will most likely know whether malaria was present in their homeland. If so, they probably developed some immunity, and malaria will not likely be a major problem, except among young children. If they did not come from an area with malaria, it is very important to check whether malaria existed along the route by which they came to the camp or in the camp area itself. Local health authorities will probably have information about the existence of malaria in the camp area and whether it is the more serious (*falciparum*) or less serious (*vivax*) form.

**3. Assess prevalence and severity:**

- (a) **Laboratory Data**—If a simple laboratory is available and malaria smears can be taken, examine the laboratory records to determine the number of smears done, the number positive, and whether each smear was positive for vivax or falciparum malaria.
- (b) *Check morbidity and mortality records* to assess the prevalence of the disease in the camp.

**4. Institute control measures:**

- (a) If displaced people are in a highly endemic area for falciparum malaria, but came from a non-endemic (malaria-free) area, it can be assumed that malaria may be or might become a problem (during the malaria season). Mosquito spraying, or other appropriate control measures in displaced persons areas, and close surveillance for possible malaria should be instituted.
- (b) If malaria is already a major problem, mosquito control becomes more urgent. Consideration should also be given to prophylaxis of the entire population with antimalarial drugs (if this is possible) until mosquito abatement programs can be instituted.

**Measles**

Measles is a highly contagious viral infection characterized initially by fever, cough, running nose, and red eyes. This is followed in 3–7 days by a dusty red, blotchy rash which begins on the face and then extends over the rest of the body and lasts for 4–6 days. *Measles is a disease that can result in very high mortality, especially in an undernourished population.*

Measles is spread by airborne contact with nasal or throat secretions or by contact with articles freshly soiled with secretions from the nose and throat.

The incubation period is about 10 days from exposure to disease to onset of first symptom.

The infected individual can reinfect others from the first appearance of symptoms, until 4 days after the appearance of a rash. However, once a person has had measles, he/she will develop a lifelong immunity and cannot again be a carrier.

*Measles vaccine should be given before an outbreak occurs, ideally as soon as the displaced persons can be assisted. If significant malnutrition is present, it is absolutely essential to implement a measles vaccination program as soon as possible.*

Only one injection is necessary. Vaccine should be administered to all children between 9 months and 5 years of age. If vaccine supplies are limited, the top priority is to vaccinate *all malnourished and hospitalized children*. The next priority is to vaccinate 9-month to 2-year-old children, regardless of nutritional status. If vaccine supplies are ample, all children to age 12 should be vaccinated. Vaccine should not be given to pregnant women, persons with high fevers, or those with severe egg allergies.

Since measles is such a highly contagious disease, it is likely that most susceptible individuals have been exposed, and are incubating the disease by the time several cases have been reported. Although it is not dangerous to vaccinate an individual incubating measles, it is important not to waste vaccine and manpower trying to stop the spread of measles in a camp where the disease is already established because it takes approximately 1 week after vaccination for a vaccinee to develop immunity to measles. Vaccine given several days after a vaccinee has been exposed to measles is unlikely to offer protection against the disease. The attention should instead be focused toward camps where measles has not yet appeared, especially toward villages immediately surrounding the infected camp.

If measles vaccine is not available prior to, or in the early stages of an outbreak, it should still be ordered on an emergency basis. The decision whether to immunize children in an effected camp will depend on factors including, estimates of the remaining susceptible population, and can be deferred until the vaccine is actually available.

About 5–15 percent of vaccinees will develop a temperature greater than 39.4C (103F) generally between the fifth and twelfth day after vaccination that usually lasts 1 to 2 days. Transient rashes have also been reported in approximately 5 percent of vaccinees.

## **Meningitis**

Meningitis is characterized by fever, stiff neck, and headaches. If left untreated, it can progress rapidly to confusion, delirium, coma, and death. Meningitis can be caused by bacteria, viruses, and parasites, including malaria.

Some types of meningitis are contagious, especially those due to certain bacteria (meningococcus and hemophilus). The level of contagion is low, but occasionally meningococcus can occur in outbreaks and then it becomes a serious cause of morbidity and

mortality. Ascertaining the specific cause of meningitis is often very important since, with meningococcal meningitis, it may be appropriate to vaccinate, or perhaps treat, high risk groups with an antibiotic.

If meningitis is suspected, the following measures should be taken:

1. Confirmation of the type of meningitis often requires specialized techniques (e.g., spinal taps and cultures of fluid), not generally available in displaced person camps.
2. If there are several cases of meningitis reported with rash, it can be assumed this is meningococcal meningitis. In such cases, the following steps should be taken:
  - (a) If spinal taps can be done, obtain fluid and send it to a medical laboratory for confirmation of diagnosis and determination of the type of meningitis.
  - (b) Treat and isolate all cases in a separate area for 24 hours following treatment.
  - (c) Keep an accurate tally of the number of cases and their ages.
  - (d) An effective vaccine is available for some types of meningitis. Contact appropriate health authorities in the host country or at the World Health Organization for further advice.

## **Nutritional Diseases**

### **Protein-Energy Malnutrition (PEM)**

PEM can refer to either acute or chronic undernutrition. Because children less than 5 years of age are among the most acutely affected by undernutrition, assessment of this age group by physical measurement is usually done to determine PEM prevalence in a population. In general, acute undernutrition results in wasting and is assessed by an index of weight-for-height (WFH); however edema of the extremities may be associated with acute undernutrition, in which case a clinical assessment is necessary. Chronic undernutrition produces stunting and typically results in a diminished height-for-age index.

The prevalence of moderate to severe acute undernutrition in a random sample of children less than 5 years of age is generally a reliable indicator of this condition in population. Since weight is more sensitive to sudden changes in food availability than height, nutritional assessments during emergencies focus on measuring WFH. Also, WFH is a more appropriate measurement for ongoing

monitoring of the effectiveness of feeding programs. As a screening measurement, the mid-upper arm circumference (MUAC) may also be used to assess acute undernutrition.

### Micronutrient Deficiency Diseases

In addition to PEM, micronutrient deficiencies play a key role in nutrition-related morbidity and mortality.

#### Vitamin A Deficiency:

The most common deficiency syndrome in displaced populations is caused by a lack of vitamin A. Vitamin A deficiency is also known as *xerophthalmia* can cause night blindness in early stages and permanent eye damage and blindness in later stages. Famine-affected and displaced populations often have low levels of dietary vitamin A intake before experiencing famine or displacement, and therefore, may have very low vitamin A reserves. Furthermore, the typical rations provided in large-scale relief efforts lack vitamin A, putting these populations at high risk. In addition, some diarrheal diseases rapidly deplete vitamin A stores. Depleted vitamin A stores need to be adequately replenished during recovery from these diseases to prevent the disease from becoming worse. Vitamin A is stored in the liver and after initial treatment, supplemental doses can be as much as three months apart.

#### Vitamin C Deficiency (Scurvy):

Although scurvy rarely occurs in stable populations in developing countries, many outbreaks have occurred in displaced and famine-affected populations, primarily because of inadequate vitamin C in rations. Scurvy is marked by spongy gums, loosening of the teeth, and a bleeding into the skin and mucous membranes. Fortification of foods with vitamin C is problematic because vitamin C is unstable and cannot be stored in the body. The best solution is to provide a variety of fresh foods either by including them in the general ration or by promoting access to local markets. In addition, local cultivation of vitamin C-containing foods should be encouraged. Patients with clinical scurvy should be treated with 250 mg of oral vitamin C two times a week for 3 weeks.

#### Niacin Deficiency (Pellagra):

Pellagra is caused by a severe deficiency of biologically available niacin in the diet. It is marked by dermatitis, gastrointestinal disorders, and central nervous system problems. Treatment of maize flour with lime (which converts niacin to a biologically available form of niacin) and the inclusion of beans, peanuts

(ground nuts), or fortified cereals in daily rations increases the total intake of available niacin and will prevent the development of pellagra

### **Anemia**

Anemia is caused by a lack of hemoglobin and indicates a lack of iron in the diet. It is marked by a lack of energy. Severe anemia in a displaced population can be a major cause of mortality for young children and pregnant women. Treatment for anemia includes a daily administration of iron/folate tablets and vitamin C. Supplementary feeding of high-risk groups with corn-soya-milk (CSM) will also help reduce the likelihood of anemia (CSM contains 18 g iron/100 g).

### **Thiamine Deficiency (Beriberi):**

Beriberi is caused by an inability to assimilate thiamine. It is marked by inflammatory or degenerative changes of the nerves, digestive system, and heart.

### **Polio**

Polio is an acute viral infection characterized by fever, malaise, headache, nausea, vomiting, and stiffness of neck and back, with or without paralysis. Polio can range in severity from an apparent infection without any symptoms or meningitis, to paralytic disease and even death due to paralysis of the muscles or respiration. The incidence of an apparent infection or "minor" illness usually exceeds that of paralytic cases by more than a hundredfold

The paralysis of polio is typically asymmetrical (i.e., involving only one leg or one arm). In displaced persons situations, the diagnosis is generally made on symptoms alone, since laboratory diagnosis involves the difficult task of isolating the virus from feces or saliva.

Polio is spread by close contact with infected individuals, but rarely by food or water. In developing countries, older children and adults are usually immune to polio, having had contact with the virus during childhood.

The incubation period for polio is from 3–21 days, but commonly 7–12 days.

The polio virus persists in the throat for about 1 week, and in the feces for 3–6 weeks or longer. Cases are most infectious for 1 week before and after onset of symptoms

One should assume that fever followed by asymmetric (one-sided) paralysis is polio. Even a few cases of paralytic polio indicate an epidemic and should be treated by a mass childhood vaccination campaign with oral polio vaccine. Oral polio vaccine is safe, inexpensive, has few side effects, and is easy to administer. Inactivated polio vaccine is available in injection form, but the easiest and most effective way to administer the vaccine is orally.

### **Skin Infections**

*Scabies* is a common displaced person skin infection, especially for those living in crowded conditions with inadequate water supplies for washing. *Scabies* is caused by a mite and is characterized by intense itching and small sores caused by the mite burrowing under the skin.

*Impetigo* (streptococcal infection of the skin) is another contagious skin infection common in displaced people.

Skin infections are generally a low priority in the emergency phase of the relief operation; but since these infections may be an indication of deficiencies in the supply of soap and water and of overcrowding, they should be investigated.

If skin infections are a major problem, the following measures should be taken:

1. Check to be sure displaced persons have enough soap and water for washing.
2. Specific treatment (medicine) is available for both scabies and impetigo and should be given as needed.
3. Clothes worn by displaced persons during the day prior to treatment should be washed thoroughly.

**Tetanus** (See "Diphtheria")

### **Tuberculosis (TB)**

TB is usually not an illness that needs to be considered in the first few weeks of a displaced person emergency. The disease can take years to develop after original exposure. It is a chronic, progressively debilitating disease most commonly involving the lungs that is characterized by fever, cough with sputum (phlegm) production, and weight loss. TB is usually not a rapid fatal disease except in very young children who can die rapidly of disseminated TB or TB meningitis. Various treatment regimens have been developed, but even the shortest regimen requires 6 months of continuous treatment.

Although TB may not be a first priority in an emergency, it should not be forgotten. Crowded camps housing debilitated displaced people provide a fertile ground for transmission of the disease. Two arguments are often raised to justify not instituting a TB control program:

- TB requires prolonged treatment which is unlikely to be completed in an emergency displaced person situation
- Inadequate short-term treatment may cause the development of resistant TB strains.

These are not always valid arguments in displaced person situations for the following reasons:

- Ill individuals have difficulty travelling and are unlikely to leave a safe haven where food and water are available. In addition, secure camps tend to remain in existence for more than 6–9 months (i.e., displaced person situations tend to exist much longer than desired or anticipated).
- Short-term treatment with adequate TB combination therapy regimens is unlikely to develop resistance and may actually prevent the spread of TB in a crowded camp.

If TB is suspected, the following measures should be taken:

1. Attempt to confirm the diagnosis. TB can be easily diagnosed by a laboratory technician if a microscope is available. If laboratory confirmation is not available, assume that *fever and cough that persists for more than three weeks is TB* until proven otherwise.
2. If sputum smears can be done, examine laboratory records to determine the total number of smears examined and the number found to be positive for TB. The higher the percentage of positive TB smears to number of smears examined, the more likely it is that TB is a major problem in the displaced person population.
3. Check morbidity and mortality records to assess the number of deaths attributable to TB. Check also the number of patients reporting to the hospital or aid station with fever and chronic cough.
4. If TB is a major problem, a treatment program should be instituted by an experienced agency or physician and case finding should begin. Patients with chronic cough and fever should have their sputum screened for TB. If tested positive, they should be enrolled in the TB control program. The treatment program does *not* need to be hospital-based.
5. Consideration should be given to starting a BCG vaccination program. Since young children are at high risk of developing severe and rapidly progressive cases, BCG vaccine

should be targeted at the young, especially children under 1 year of age. In some countries, this vaccine is routinely given at birth.

## **Typhoid**

Typhoid is characterized by fever, headache, malaise, and occasionally a mild rash on the trunk. Constipation occurs more commonly than diarrhea.

Typhoid is spread by food or water that has been contaminated by feces or urine from a patient or carrier of the disease. Flies can also transmit the disease.

The incubation period is 1–3 weeks.

Usually the typhoid bacteria is excreted in the stool while the patient is sick. About 70 percent of patients will excrete bacteria for three months, and 2–5 percent become permanent carriers.

As with cholera vaccine, typhoid immunization is *not* recommended in displaced person situations or following natural disasters. The vaccine requires two shots 1 month apart to be effective. The vaccine is associated with a high incidence of side effects such as 1 to 2 days of localized pain around the injection site, fever, malaise, and headache.

In an outbreak situation, vaccination programs can be harmful since they divert scarce resources and attention that should be directed at ensuring safe food and water supplies.

If a typhoid outbreak is suspected, the following measures should be taken:

1. *Confirm the diagnosis.* In displaced person settings, collect urine or stool samples after the first week of illness and send the specimen(s) to a regional public health lab or hospital.
2. *Check the hygiene loop* to be sure water is safe and protected from sewage contamination.
3. If no obvious source is found, even though typhoid is *confirmed* as a major problem, additional help should be requested from regional or national health authorities.

## Whooping Cough (See "Diphtheria")

### 4. Displaced Person Health Care

Displaced person health care must include preventive and curative measures. Although the amount of curative measures needed will vary with each emergency, it is often dependent on the amount and quality of preventive care that is achieved.

Particularly where several organizations are involved, close attention must be paid to ensure a common standard of appropriate health care. *Standardized treatment schedules are essential.* In situations where qualified personnel are scarce and a confirmed diagnosis is not possible, standard treatment should be given for presenting symptoms. Unless treatment is administered immediately, clear oral and written guidance on the dosage and schedule must be given to each patient in his or her native language. In addition, organizations should work together to ensure a fair distribution of available services at all displaced person camps

*Treatment inappropriate to both the needs of the people and their circumstances may be not only useless and wasteful, but can also have a negative effect on the displaced people's attitude toward health care and preventive measures in general.*

#### a. The Provision of Health Care

Displaced people must be given responsibility for their own health. Outside health workers must understand the population's own concepts of health and disease. Services should be operated *with, rather than for*, the displaced people. If not, health care services will be less effective, may be distrusted by the population, and are likely to collapse when key outside personnel leave.

Strong emphasis should be placed on the training and upgrading of the medical skills of selected displaced people, particularly in their former roles within the community (e.g., traditional healers and midwives). Even a displaced person with no prior experience can be a very effective health worker following basic on-the-spot instructions in a few relevant tasks.

As a general principle, the order of preference for selecting health personnel in cooperation with the national services, is displaced people first, experienced nationals or residents next, and finally, outsiders.

Most emergencies will require some combination of these sources. *An important consideration may be the government's attitude toward foreign medical personnel, including the recognition of qualifications and authority to practice medicine*

In a major emergency, a health coordinator may be assigned responsibility for planning and developing appropriate health care programs, establishing standards, monitoring the quality of services, and ensuring proper liaison and coordination among the health ministry and other international organizations on health matters.

Displaced people must have easy access to appropriate treatment. Unless treatment is provided at the right level, hospitals or major health centers will be swamped by displaced people demanding treatment for simple conditions. What is required, therefore, is a community-based health service that identifies those in need of health care and provides it at the appropriate level

The first level of health care for displaced people is the community health worker who is responsible for a section of the population and works among them to provide outreach services such as home visits, case finding, and followup. He/she is also responsible for basic community-wide preventive measures, including public health education. The community health worker should be a displaced person with appropriate training who can identify health and nutritional problems and refer patients to the clinic if simple on-the-spot treatment is not possible. While displaced people may go to clinics without referral, it is important to remember that not all who are most in need will go to the clinic. The diseases of those who do, therefore, may not reflect the most common problems in the community.

As a general rule, *one clinic should be established for every 5,000 displaced people*. The clinic should be staffed by one nurse and 2–3 displaced people or national health workers. The clinic should provide both preventative and curative services and supervise community health workers' outreach services. Water and sanitation are essential services at all health facilities.

The next level would be a *health center for each displaced person settlement with limited beds for overnight stays at a ratio of approximately one bed per 5,000 displaced people*. The health center should be staffed by 2 doctors, and 8–10 nurses per 20,000 displaced people. One doctor should work in the center

while the other covers clinic level activities. Health centers have responsibility for supervising settlement health services including training health workers and implementing selective feeding programs, treating/referring cases not handled at the clinic level, as well as controlling, distributing, and administering drugs.

There may also be a regional/district hospital with a staff assisted by one doctor and two nurses from the emergency organization, that handles complicated maternity cases and surgical emergencies on referral from the settlement.

*If possible, special hospitals for displaced people should be avoided.* They are skilled-labor intensive, provide only curative services, rarely continue to be properly run once outside support is withdrawn, and are inappropriate for long-term needs. Once established they are extremely difficult to close. Such hospitals, therefore, should only be provided if a clear and continuing need exists that cannot be met by existing or strengthened national hospitals. If the need for such a special hospital exists, the number of beds required would depend on the condition of the population. For example, one bed might be required per 2,000 displaced people in the early stages of an emergency, requiring two doctors and six nurses plus auxiliary support. Temporary hospitals constructed with local materials may be appropriate for cholera treatment.

“Portable field hospitals” have several disadvantages including the complicated logistics of transporting and setup, cost, and inappropriate systems and equipment that are overly sensitive and dependent on outside power. Field hospitals are rarely satisfactory for meeting continuing needs. Unfortunately, donors sometimes encourage such hospitals even when unsuitable, due to their great public relations value.

#### **b. Medical Supplies**

Emergency medical supplies should draw on in-country resources to the greatest extent possible. Special arrangements may be necessary, however, to respond to initial needs for adequate quantities of basic drugs and a strict control of unsolicited donations.

The World Health Organization has developed an updated standard list of essential drugs and medical supplies for use in an emergency. They are included in *The WHO New Emergency Health Kit* that has been adopted by many organizations and national authorities as a reliable, standardized, inexpensive, and

quickly available source of essential drugs and health equipment urgently needed in an emergency situation. Its contents are calculated to meet the needs of a population of 10,000 persons for 3 months.

*The Kit consists of two different units of drugs and medical supplies: the basic unit (10/kit) and the supplementary unit (1/kit).*

The *10 basic units* contain drugs, medical supplies and some essential equipment for use by primary health care workers with limited training. *Each basic unit is designed for a population of 1000 for 3 months, weighs 45 kg, and is .2 cubic meters.* It contains twelve drugs, none of which are injectable. Simple guidelines have been developed to help the training of personnel in the proper use of the drugs.

*The supplementary unit is designed for a population of 10,000 for 3 months, weighs 410 kg, and is 2 cubic meters.* It contains drugs and medical supplies to be used only by professional health workers or physicians. It does not contain any drugs or supplies from the basic units and therefore can only be used as a supplement to the basic unit kit.

The total emergency health kit includes *10 basic units and one supplementary unit, weighs approximately 860 kg, and is 4 cubic meters.* An entire kit could be strapped into the back of a pickup. It should be noted that emergency Health Kits are designed to meet only initial needs pending the establishment of a regular system for medical supplies.

Medical supplies can also be ordered through *the UNICEF Packing and Assembly Center (UNIPAC)*, a UN facility in Copenhagen, sponsored by the Danish government with a stockpile of prepacked drugs and supplies identified on the WHO and UNHCR list. These supplies must be ordered through OFDAW, not directly from the field.

Vaccines should be borrowed from local stocks if available. If vaccines are to be provided from overseas supplies, special considerations must be taken. *Most vaccines require refrigeration and careful handling to remain effective. Without a "Cold Chain", the refrigerated transportation system for vaccines from manufacturer to individual, the immunization program will be ineffective.* Time and temperature control cards should be posted on cold storage facilities. Temperatures should be checked twice daily and noted on cards accompanying the vaccine. Storage facilities

located at the central (capital city) and regional level should have temperature alarms and backup (emergency) generators. Vaccines should be stored on central shelves and *not in refrigerator doors*. Take in to account also the time needed to clear customs.

Donations of unsolicited drugs may present a problem, as their quantity and quality may vary greatly. Unsolicited drug donations may consist of small quantities of mixed drugs, free samples, expired medicines, inappropriate vaccines, and drugs identified only by brand names or in a foreign language.

### **c. Health Education**

The importance of health education is widely accepted. It is a difficult task, however, which outsiders may not understand, to convince and persuade at-risk populations to change long-established habits that will increase their health risks. During *the emergency phase, priority topics of any health education program should be directly related to immediate public health problems, such as the disposal of human excreta and refuse*. Trained teachers from the population and respected elders are likely to be more effective than outsiders in communicating basic principles and practices of health to their own people.

## **F. Displaced Person Camps: Site Selection, Planning, and Shelter**

### **1. General**

*Although circumstances may make displaced person camps unavoidable, the establishment of displaced person camps must be a last resort, because of the attendant problems of camps discussed throughout this chapter.* The location of a displaced person camp may range from a spontaneous settlement over a wide area, to an organized rural settlement, to a concentration in a very limited area. A solution that maintains and fosters self-reliance among the displaced is always preferable

If no prospects are in sight for a resolution to the displacement, planning for the displaced population's needs should assume a long-term outlook. Temporary arrangements can be very difficult to change once established. Site selection, planning, and the provision of shelter have a direct bearing on the provision of other assistance. They are important considerations in the overall assessment of needs and the planning of emergency response.

Decisions must be made as part of an integrated approach taking into account, advice from experts, and views of displaced people.

Expertise may be required in the fields of geology, settlement, planning, engineering, and public health. Familiarity with local conditions in both the displaced population's area of origin and the present location of the displaced is important, as is previous experience in similar emergency situations.

There may be a need to set up a reception or transit center, through which displaced people pass on the way to a longer-term settlement site. These centers must have the same considerations as those relevant to long-term settlements.

## **2. Criteria for Site Selection**

### **a. Social Needs**

If possible, the social and cultural backgrounds of the displaced should be considered when determining a camp location. However, in most circumstances the choice will be limited and any land that meets even minimum standards may be scarce. Once a site is located, it is wise to determine why the site was not already in use and examine whether the reason (e.g., no water or because it floods in the monsoon) would exclude use by displaced people.

### **b. Water**

The single most important site selection criteria is the availability of an adequate amount of water on a year-round basis. It is also commonly the most problematic. A site should not be selected on the *assumption* that water can be acquired merely by drilling, digging, or hauling. Drilling may not be feasible and may not provide adequate water. No site should be selected where the hauling of water will be required over a long period. Professional assessment of water availability should be a prerequisite in selecting a site.

Where water is readily available, drainage often becomes the key criterion. For effective drainage therefore, the entire site should be located above flood level at a minimum of 3 meters above the water table, preferably on a gently sloping area. Flat sites can present serious problems for the drainage of waste and storm water. Marshes or areas likely to become marshy or soggy during the rainy season should be avoided. The watershed of the area may be a consideration.

### **c. Open Space**

The site must provide a sufficient amount of usable space for the displaced population. *WHO recommends a minimum of 30 square meters per person, plus the necessary land for communal and agricultural activities and livestock.* Of this, 3.5 square meters is the absolute minimum floor space per person in emergency shelter. Since there is always the possibility that more people may arrive, the site should be large enough to allow for major expansion.

If the population has been displaced due to civil strife, the site should be removed from areas of potential conflict.

### **d. Accessibility**

The site must be accessible by vehicles and close to communication links and sources of supplies and services such as food, cooking fuel, shelter material, and national community services.

### **e. Environmental**

The area should be free of major environmental health hazards such as malaria, onchocerciasis (river blindness), schistosomiasis (bilharzia), or tsetse fly. Climatic conditions should be suitable for habitation throughout the year. For instance, a suitable site in the dry season may be unusable during the rain season. While a daily breeze is an advantage, strong winds may damage emergency and temporary housing, especially tents. To the extent possible, displaced people should not be settled in an area where the climate differs greatly from that to which they are accustomed.

### **f. Soil and Ground Cover**

The soil should allow for water absorption and the retention of human waste. Rocky or impermeable sites should be avoided. If possible, land suitable for vegetable gardens and small scale agriculture should be selected for the site.

The site should have a good ground cover of grass, or bushes, or trees, as covering vegetation provides shade and reduces erosion and dust. During construction of the camp, care should be taken to cause as little damage as possible to the vegetation and topsoil. Bulldozers, if used, should avoid scraping topsoil off the site, as often occurs. *If wood must be used for domestic cooking fuel, it should not be taken from vegetation on the site.* Alternative sources of fuel must be found as soon as possible to avoid irreplaceable loss of surrounding wood.

## **g. Land Rights**

The land should be exempt from ownership, grazing, and other uses by local populations. This can be a major cause of local resentment. Some authorities proposing the site are unaware of customary rights exercised by local populations. Sites are often provided on public land by the government. Any use of the land must be based on formal legal arrangements in accordance with the laws of the country.

## **3. Site Planning**

### **a. General Considerations**

- At the onset of an emergency, the immediate provision of essential goods and services is more important than efforts to change the way people have already arranged themselves.
- Site planning should take potential need for expansion into account.
- Site planning should first consider the characteristics and needs of the individual family, and reflect the wishes of the community as much as possible.
- A displaced person settlement is not a natural community. Particular care will be required to ensure that special needs are met.
- The overall physical layout of a site as well as other aspects of the site should reflect a decentralized community-based approach focusing on family, village, or ethnic group.

## **4. Specific Infrastructure Design Considerations**

### **a. Latrines**

While water requirements often determine site selection, sanitation requirements can dictate the site layout. *If latrines are used, there should be at least one for every 20 persons. They should be located no less than 6 meters and no further than 50 meters from any house. If latrines are too far away, they will not be used.* Sufficient space must also be left for replacement latrines. If communal latrines are unavoidable, they should be accessible by road to facilitate maintenance. To avoid contaminating water sources, latrines should have an effective drainage system that is easy to repair, both for rainwater and waste water.

### **b. Water Distribution**

Where possible, *the maximum distance between any house and a water distribution point should be no more than 100 meters or a*

*few minutes walk.* Water will often be pumped from the source to an elevated point in order to allow gravity feed distribution. Planning of the site should take this into account.

### **c. Roads and Pathways**

The site should be accessible from other sites, and contain all-weather roads and pathways connecting the various areas and facilities. Roads should be built above flood level and have adequate drainage. If there will be a significant vehicle traffic on the site, it should be separated from foot traffic.

### **d. Firebreaks**

*A firebreak (an area with no buildings) 50 meters wide is recommended for approximately every 300 meters of building area.* This area can be used to grow vegetables or for recreation. If space allows, the distance between individual buildings should be great enough to prevent collapsing burning buildings from touching adjacent buildings. The direction of the prevailing wind should be a consideration.

### **e. Administrative and Community Services**

At the onset of an emergency, it may be difficult to foresee all the administrative and community services likely to be required. Underestimation of the space required for future communal needs is a common problem in camps of limited area. Therefore, where adequate space is available, free areas must be allocated for future expansion of these services. The following lists administrative and community services that are often required

#### **Likely to be centralized:**

- camp administrative office.
- essential services coordination offices (health care, feeding programs, water supply, education).
- warehousing and storage.
- initial registration/health screening area.
- tracing service.
- therapeutic feeding center (if required).

#### **Likely to be decentralized:**

- bathing and washing areas.
- community services (health centers, social service centers).
- supplementary feeding centers (if required).
- education facilities.
- institutional centers (such as for the disabled or unaccompanied children), if required.

## **f. Physical Layout**

The basic principle of any physical layout of a camp is that it should *be organized into small community units or villages made up of approximately five sectors (1000 people per sector)* containing the decentralized community services mentioned above. These village units are in turn organized around the central core services.

The location of centralized services will depend on the specific situation and in particular, the space available. Where space is available, it may be advantageous to have the centralized services located in the center of the camp. Where space is scarce, it may be better if centralized services are located near the entrance to the site. This will avoid trucks having to drive through a densely populated camp. Whatever the layout, warehouses should be located near the administrative office for security reasons.

The linear or grid layout, with square or rectangular areas separated by parallel streets is often used. It has a simple design, is quick to implement, and allows a high population density. It should be avoided however, as environmental health problems and disease are directly proportional to population density. Furthermore, a rigid grid design makes the creation of community identity difficult, as the displaced people are not usually accustomed to living in such a pattern

## **5. Shelter**

At a minimum, shelter must provide protection from the elements, space to live and store belongings, privacy, and emotional security. Shelter is one of the most important determinants of general living conditions and is often one of the largest items of non-recurring expenditure. While the basic need for shelter is similar in most emergencies, other considerations such as the kind of housing needed, what materials and design are used, who constructs the housing, and how long it must last will differ significantly in each situation.

Lack of adequate shelter and clothing can have a major adverse effect on the health and nutritional status of displaced people. Thus, in addition to shelter, the provision of sufficient blankets, appropriate clothing, and possibly heaters will be a high priority.

Neither pre-fabricated buildings nor specially developed emergency shelter units have proved effective in displaced person emergencies. Both are ineffective due to their inappropriateness, high unit cost, transport problems, and inflexibility. Also, emergency shelter arrangements will already have been constructed before such systems can arrive. For similar reasons, tents are often not an effective means of providing shelter either. They are difficult to live in and provide little insulation from temperature extremes. Tents, however, may be useful for displaced people of nomadic origin, and when local materials are not available or are only seasonally available. Where tents are used, repair materials should be provided.

The best way to meet emergency shelter needs is to provide materials or shelter similar to those used by the displaced population or the local population. Only if such materials cannot be adequately acquired locally should emergency shelter material be brought into the country. Above all, the simpler the shelter, the better.

Shelter must be available before other services can be developed properly. Emergency materials should be reusable for the construction of improved housing, wherever possible. Where local materials are in short supply or have a short life, consideration should be given to acquiring more permanent materials. If a continued high density of occupation is unavoidable, fire resistant materials may be needed.

*The key to providing adequate shelter is the provision of a roof.* If materials for constructing a complete shelter are inadequate, priority should be given to constructing at least the roof. Walls can be made of earth or other materials found on site or made locally available.

Housing should meet the cultural and social requirements of a displaced person's home. Similar housing will help reduce the disorientation and emotional stress suffered by the displaced population. To the extent possible, longer-term housing must be similar in design and construction to that with which the displaced are familiar, while reflecting local conditions and practice. This will generally mean single-family shelters, unless the displaced are accustomed to multifamily units. Although more costly, the benefits of individual homes for the displaced cannot be overestimated. *The risk of communicable diseases increases enormously in communal shelters.* If multifamily shelters must be used, no more than 35 persons (approximately seven families)

should be assigned to any one structure. Experience has shown that social and environmental problems may also rise if more people live in multifamily shelters. Also, buildings made from local materials may be approaching their structural limits at this size.

Materials and design should meet the minimum technical standards for the different local seasons. For example, roof material must be strong enough to withstand damage by the sun, rain, snow, and winds. (OFDA-supplied plastic sheeting has been very effective as roofing material. See stockpile section of this manual for more information). Raised flooring is required in areas of high rainfall. Wall material must afford privacy and protection from the elements. If the site lies in a hazard-prone area (e.g., subject to earthquakes or cyclones), the design of buildings and their siting should conform to hazard-resistant criteria. In buildings where cleanliness and hygiene are particularly important, the floor should be cement or at least washable.

Even in an emergency shelter, including communal buildings, should be built by the displaced people themselves, provided adequate organization and material support is given. This will help to ensure that housing will meet their particular needs. Work by displaced people will reduce their sense of dependence and can cut costs considerably.

## **G. Sanitation and Environmental Service**

### **1. General**

The disruption and overcrowding of people accustomed to living in different and less crowded conditions make sanitation a critical issue.

Indiscriminate disposal of human and other waste will pose serious threats to the health of individuals, family groups, and the whole community. In a displaced person emergency, sanitation facilities to which they were accustomed are no longer available. Basic services are often lacking and habits may have to be changed.

For this reason, an effective environmental system must be established to include the following: the provision of safe water; disposal of human excreta, waste water, and garbage; insect and rodent control; safe food-handling practices; and site drainage. These services and the provision of health care are interrelated and should be considered together.

*An acceptable and practical system for the disposal of human excreta is the key to reducing health hazards.* The system must be developed in cooperation with the displaced, and be culturally appropriate, even if circumstances necessitate a departure from traditional practices. Even special public health education may be required to ensure that the system will be used by the displaced population.

## 2. Organization

Environmental sanitation will be a very important consideration in campsite layout; its organization and operation must be integrated with other community services

Expert advice should be sought from a public health engineer or sanitarian familiar with the habits of displaced people, the local population, and experienced with displaced person emergencies.

Good sanitation depends to a great extent on attitudes of the community and the people who run the system. The system and services developed should be able to operate effectively with a minimum of outside involvement. Therefore, selected displaced people must be trained to run the sanitation and environmental programs.

*The most common cause of complete failure of a sanitation system is the establishment of the wrong system.* This is a result of inadequate discussions with the population and a failure to take all relevant factors into consideration.

*The most common cause of breakdown of a sanitation system is inadequate maintenance,* even for properly designed and installed systems. Breakdown of latrines will lead to contamination of the environment and a high risk of infection and disease. Regular inspection and maintenance of the latrines should be enforced. The best guarantee of proper maintenance is the allocation of latrines to individual families

*Even when in working order, latrines will not be used unless they are clean.* Individual families should be responsible for the cleanliness of their own units. If communal latrines are unavoidable, special arrangements to keep them clean may be necessary (i.e., compensating individuals who are responsible for keeping them clean and operational on a daily basis). Particular attention must be given to the maintenance and cleanliness of latrines serving community facilities such as health centers. It should be noted that disinfectants should not be poured into pits or tanks of latrines that dispose of excreta by biological degradation.

Instead, the regular addition of soil, ashes, or oil may be used to control insect breeding and reduce odor.

A public health education program should be established and emphasize the importance of sound environmental sanitation practices. The link between excreta contamination and disease must be clearly understood by all, including children. Children are not only the main sufferers from excreta-related diseases, but also the main excretors of many pathogens that cause diarrhea. Since children are often frightened by unfamiliar latrines, particular care will be needed to ensure that latrines are safe and physically suitable for children.

### **3. Disposal of Excreta**

Safe disposal of excreta is critical since agents of most infectious diseases are passed from the body in excreta. These excreted infections fall into four main groups: viruses, bacteria, protozoa, and worms (helminths). Excreta, unless properly isolated, can also provide a breeding ground for insects, which act as either direct or indirect transmitters of disease.

Links between diseases, infections, means of transmission, and the sanitation system must be kept under constant surveillance. But the links are not always the most obvious. For example, the most important human link in transmission of an infection is the carrier who shows little or no sign of disease. Conversely, persons in an advanced state of disease may have little or no importance in transmission.

Human waste is more dangerous than animal waste; the safe disposal of human excreta is more important than the disposal of animal waste. Human feces are much more dangerous than urine. In areas of Africa and the Middle East where the *Schistosoma haematobium* species of bilharzia exists, and in all areas where typhoid is common and endemic, disposal of urine requires special attention.

#### **a. Selection of a System—Immediate Considerations**

The selection of an appropriate excreta disposal system requires consideration of a number of factors. In an emergency, however, time is the critical factor. Pollution of the environment by excreta, with all its attendant risks, cannot be stopped without immediate sanitation measures. Thus the range of choices is always much more limited at the very outset of an emergency; weeks or months cannot be lost in waiting for expert advice, construction to be

completed, or material to arrive. In an emergency situation, act first and improve later. Temporary systems to meet immediate needs can be improved or replaced later.

Emergency conditions may therefore dictate at least the initial use of trench latrines. These can be dug quickly and need less space than individual family units. While shallow trenches may be an initial quick solution, deep trench latrines are incomparably more effective. Where space and soil conditions allow, the simplest and most common individual family unit is the pit latrine.

Once a temporary system has been established, more time and care should be expended to establish the most appropriate waste disposal system. Two main factors will affect the choice of an excreta disposal system: traditional sanitation practices of the displaced people and the physical characteristics of the area, including the geology, availability of water, rainfall, and drainage. Failure to take proper account of either factor can cause the system to rapidly become a health hazard. Above all, cleanliness of latrines and their ease of access will determine whether or not they are used.

First it must be determined how the displaced people can modify their traditional practices to reduce health hazards during the emergency situation. Over half the world population does not use latrines. This and other factors must be considered at the planning stage and will directly affect the type of system to be established. Other cultural factors to consider include.

- previous sanitation system and practices.
- method of anal cleaning.
- preferred position (sitting or squatting).
- need for privacy.
- segregation of sexes and other groups or individuals with whom it is culturally unacceptable to share a latrine.
- cultural practices for children.
- cultural taboos (e.g., avoiding contact with anything that may have touched excreta of others).
- social factors, including likelihood of community action to ensure proper use of proposed system.
- need for special orientation (direction) of latrine.
- systems used locally in neighborhood of site.

In addition to these considerations, arrangements must be made to assure the availability of appropriate anal cleaning materials at or near all latrines. This is essential to the maintenance of hygiene. Also, latrines must be safe for children and women, and

accessible at night. For individual units, families may provide their own lamps, but some form of lighting should be provided for communal units.

In some cases, guards may be needed near the latrines to ensure security.

### **b. Immediate Action**

The first group of displaced people arriving at a site should construct an adequate disposal system. Without proper facilities, displaced people are likely to defecate indiscriminately, contaminating their environment and possibly, their water supply. In consultation with community leaders, *the first step is to localize excreta*; i.e., control surface defecation. If space allows, designate an area or areas away from dwellings and downwind, but accessible and close in proximity. Fence the area(s), ensure privacy, and provide a shallow trench and spades, if possible. Site such areas where the surface runoff during rain will not cause contamination and protect the area with cut-off ditches.

A publicity campaign will be required to encourage the population to use specified areas and not defecate indiscriminately near dwellings. Measures must also be taken to prevent defecation or urination in or near the water supply. Immediate action in both regards can significantly reduce public health hazards.

If the ground is flooded, marshy, or has a high water table, arrangements must be made as soon as possible to physically contain the excreta. Under such conditions, the location of the area away from the dwellings and water source is very important. Pending a proper containment system, a simple raised structure (e.g., a wooden stage some 50 cm high) can prevent the population from being contaminated by their own excreta. Empty 200 liter (45 gallon) oil drums can also be used if one end of the drum is cut out and inserted end down into a hole in the ground, that is as deep as the water allows, with the last half meter of the drum left out of the ground. A small hole should be cut into the other end of the drum to transform it into a squatting plate. These options should be viewed as *very short-term* sanitation interventions.

### **c. Long-Term Options**

For a number of reasons, expert advice is required to develop the most appropriate waste disposal system. The nature of the soil will be important; if it is highly impervious, some systems will be precluded. The availability of water and cultural considerations

must also be considered. There are many simple options, if properly constructed and maintained, that will meet all public health requirements. In most emergencies, two main types of latrines will be required, even for displaced people unaccustomed to them. *Trenches, pits, or holes in the ground can be used as dry latrines. Water dependent latrines can be flushed.* There are also systems based on composting or the cartage of excreta.

In hot, dry climates where sufficient space is available, localized defecation areas located away from dwellings may be the best long-term arrangement, as heat and sunlight render the feces harmless with time. Black rock is the best surface. Under these conditions, potential health hazards in the area (e.g., increased number of rats) should be periodically reviewed.

If the camp is on the coast, displaced people may choose to defecate in the water. While this is less harmful for the displaced people than to indiscriminately defecate on land, it should be discouraged unless there is no other option. The dangers of defecating in the water increase greatly with numbers. Such practices contaminate the high water line, and increase the health hazards of washing in the sea. Defecation in bays, estuaries, or lagoons where fish or shellfish are caught should be greatly discouraged, since this may be a source of infection.

#### **d. Latrine Styles and Considerations**

There are three basic *latrine styles*: individual family units, centralized units with each latrine allocated to an individual family, and communal systems. Individual family units are the preferred solution, since people will always make more effort to keep their own latrine clean than a communal facility.

To determine the most appropriate latrine style, consideration must be given to a number of factors: the number and siting of latrines, population density, soil, available water, drainage, and construction materials.

##### **(1) Number and siting of latrines**

As a rule, *at least one latrine should be provided for every 20 people.* Latrines should be located at least 6 meters from dwellings, 10 meters from feeding and health centers, and at least 15 meters, and preferably further from wells or other drinking water sources. Although all these distances depend on latrine and soil type, latrines should be located no more than 50 meters from users. If people must walk a considerable distance to a latrine, they will defecate in a more convenient location, regardless of the health hazard.

## **(2) Population density**

Population density will affect the space available for the excreta disposal system and thus the type of system. If latrines are too close to dwellings, there may be insufficient space for individual units. Overcrowding may cause major health hazards. This must be considered in site planning. The camp layout should be determined, among other things, by the needs of the most suitable sanitation system, not vice-versa. Space must be available for replacement latrines where necessary.

## **(3) Soil**

Soil conditions can vary over a short distance of land, thus requiring a thorough survey of the area. The nature of the soil also may exclude certain options. For example, rocky soil may prevent the digging of pit-type systems. Sandy soil will demand special actions to prevent side wall collapse of pits. Impervious clay soils may exclude any system dependent upon seepage. Account should also be taken of the difference between dry and wet season soil conditions. If the ground freezes in winter, the choice of systems may be limited. Where there is a high water table, even only seasonally, care must be taken to ensure it is not contaminated by seepage from the latrines. Excreta must be contained in flood or swampy conditions.

## **(4) Available water**

The amount of available water will determine whether disposal systems requiring water are a possibility. These systems are generally more expensive than those not requiring water. Since displaced person situations are often characterized by a lack of reliable water sources, the excreta disposal system should not be dependent on water availability. However, whatever the system, water should be available for anal cleaning.

## **(5) Drainage**

Since all camps experience rain from time to time, it is necessary to anticipate where surface run-off will flow and how to divert it by cut-off ditches. The possibility of flooding should also be considered and drainage provided, if necessary. If flood water enters latrines, large areas may be contaminated.

## **(6) Construction Materials**

Construction material will be needed to build some types of disposal systems like those with walls and roofs. Displaced people unaccustomed to latrines generally prefer a large enclosure with no roof. There are however, strong arguments for covering latrines to prevent rainwater filling the latrine, causing contamination around it, or weakening the surroundings. Roofs

should provide proper drainage away from the latrine. Special measures will be necessary to manufacture squatting or sitting slabs, U-pipes, and other material for wet systems, if these are not available locally. Where displaced people have an established method of covering latrines (e.g., with a wooden lattice), this is generally to be preferred, even if it is less easy to clean than a special plate. There are, however, a number of simple techniques for making the latter on site, for example with reinforced cement or fiberglass from mounds. The structure should be made of local materials that are used for reinforcing the pit when necessary. Avoid uncovered wood if possible. *Above all, the latrine must be easy to clean and the surfaces around the hole washable.*

#### **4. Waste Water, Garbage, and Dust**

##### **a. Waste Water**

Excess water from washing, bathing, and food preparation is considered waste water. It can be a problem if not drained away; waste water will stand in malodorous, stagnant pools that provide breeding places for insects, especially mosquitoes. Waste water should generally not be permitted to enter the latrine, as this will cause the latrine pit or trench to fill very quickly. However, if latrine pits or trenches are sufficiently large and the amount of water used for bathing is relatively small, displaced people should be allowed to use the latrine area for bathing because it provides privacy and drainage. To avoid problems like these, special separate washing areas with duck-boards or stones, and proper drainage should be constructed. Waste water can also be contained by localizing sources of waste water and providing local drainage.

##### **b. Garbage**

Since all communities generate garbage, established routines for the control, storage, collection, and disposal of garbage will be required. These needs must be reflected in initial site planning. If uncontrolled, the accumulation of garbage is both unpleasant and unhealthy. Rodent and insect-borne diseases increase with improper garbage disposal. Free range chickens, goats, and pigs will help control garbage; dogs will spread it.

The following suggestions for garbage storage, collection, and disposal concern, in particular, high-density camps where the problem and dangers are greatest.

### **(1) Storage**

To store garbage, garbage containers made of metal or plastic with a minimum capacity of 50 liters should be provided. A 200-liter oil drum cut in half is often used. Storage containers should have lids and drainage holes in the bottom. A ratio of one container per 10 families has proved to be effective. Containers should be placed throughout the camp so that no dwelling is located more than 15 meters away from a garbage container.

### **(2) Collection**

The collection of garbage from containers should take place on a regular, daily basis, if possible. Daily collection arrangements must be made to collect medical waste and waste from feeding centers.

### **(3) Disposal**

Garbage can be disposed by burying it at designated locations on the site or removing it off the site. Open burning of garbage on site should be avoided. If garbage has to be burned, it should be burned far from the displaced people. The ashes should be covered with a layer of soil after each burning.

*The safe disposal of all medical waste requires particular attention.* Needles and scalpels are especially dangerous. Medical waste must be tightly controlled. It should be collected, transported, and disposed of separately. Medical waste should always be burned without delay. This should be done in an incinerator to ensure a hot, complete burning. Designated areas where medical garbage and/or ashes are to be burned should be located far from dwellings and fenced to restrict access.

### **(4) Dust**

Large amounts of dust carried through the air can contaminate food and be harmful to human health by irritating eyes, the respiratory system, and skin. Dust can also harm some types of equipment used on site. The best preventive measure is to stop the destruction of vegetation on the site. Dust control can be achieved by spraying roads with water or oil, especially around health facilities and feeding centers, as well as limiting or banning traffic from certain areas.

## **5. Insect and Rodent Control**

The environment in a displaced person emergency is conducive to the proliferation of disease-carrying insects and rodents (vectors), that can also destroy or spoil large quantities of food. Flies tend to

breed in areas where food or human excreta are present, and mosquitoes thrive in stagnant water. Since the proliferation rate for both is very high (the life-cycle from egg to adult can take less than 2 weeks), the control of flies and mosquitoes is critical. Rats are also a problem as they live where there is food, garbage, and cover. As a result of overcrowding and inadequate personal hygiene, lice, fleas, mites, ticks, and other arthropods may also cause health problems.

Reducing the numbers of flies, mosquitoes, and rodents quickly in an emergency may be difficult, but physical screens can be used to control the immediate problem. The most effective long-term method of controlling insects and rodents is to make the environment less favorable for the vectors. This is done by improving personal hygiene, sanitation, drainage, garbage disposal, and food storage and handling practices. Practical measures include removing stagnant waste water, collecting garbage on a regular basis, using oil in latrines, and providing soap and sufficient water for washing. These measures should be integrated into a program with other health measures that is regularly inspected.

Vector control methods using insecticides and poisons can be dangerous. Like all methods using chemicals, they should be closely followed, monitored by specialists and supervised. All major efforts to control insects and rodents must be closely coordinated with national programs and practices, especially with the national malaria control program. Although several different methods may be used, insect breeding grounds and the displaced people's dwellings may be sprayed. Since insects may already have, and can quickly develop, a resistance to chemicals, a rotation system using different sprays may be necessary. Local knowledge of existing resistances is required. Poison and traps may be used against rats in food storage and handling areas. Particular care must be taken in disposing of dead rats, which may carry plague-bearing fleas. *Chemical spraying and rodent poisons can be dangerous to humans*

The body louse, usually found on inner clothing seams is the only proven vector of louse-borne (epidemic) typhus and epidemic relapsing fever. If there is a serious increase in body louse infestation, quick action is required by properly trained personnel. This generally includes the dusting of individuals' inner clothing and bedding with an insecticide or fumigating clothing. There is widespread resistance of lice to some insecticides, especially DDT, and expert local advice must be sought. Mass washing of clothing is not recommended as a water temperature of at least 52 °C must be maintained to kill the lice.

The following lists vectors and their potential health risks:

<u>Vector</u>	<u>Risks</u>
Flies	Eye infections (particularly among infants and children); diarrheal diseases
Mosquitoes	Malaria, filariasis, dengue, yellow fever, encephalitis
Mites	Scabies, scrub typhus
Lice	Epidemic typhus, relapsing fever
Fleas	Plague (from infected rats), endemic typhus
Ticks	Relapsing fever, spotted fever
Rats	Rat bite fever, leptospirosis, salmonellosis

## 6. Fires

Displaced person camps are often overcrowded, use light and highly combustible shelter materials, and have many individual cooking fires. For these reasons, they are very vulnerable to major fires. Measures to prevent and control fires must be considered from the start of emergency assistance at displaced person camps

### a. Prevention

*The most basic and effective measure to prevent a major fire is the proper spacing and arrangement of all buildings to provide fire breaks* Other measures include allowing individual fires for cooking only and building fires only outdoors, if possible. If cooking must take place indoors, and especially in wooden or wattle-and-daub buildings, the cooking area should be protected with asbestos sheeting if possible. If large-scale cooking takes place indoors (e.g., in a supplementary feeding center), an asbestos ceiling and walls or their equivalent is mandatory. Fire retardants can be applied to thatched roofs in dwellings. Proper precaution must be taken when storing and using fuels. Highly inflammable synthetic materials should be avoided.

### b. Control

*When fighting a large fire with scarce resources, the first priority is to contain it, rather than put it out.* Fires can be controlled in the first few minutes with modest resources, providing quick action is taken. To control fires, an alarm system, fire fighting teams, and beaters must be organized in advance and plans prepared. Since

water is generally not available in sufficient quantities or at adequate pressure for the control of major fires, sand can be an effective method of control. The creation of a new firebreak should be done by taking structures down manually or with a bulldozer if available.

## **7. Disposal of the Dead**

Dead bodies present a negligible health risk unless the cause of death is typhus, the plague, or the bodies are infested with infected lice or fleas. Nevertheless, suitable arrangements for the disposal of the dead are required from the start of a displaced person emergency. This is important as the mortality rate after a new displaced person influx may be higher than under "normal" conditions. Also, bodies must be protected from rodents, animals, and birds. Authorities should be contacted immediately to ensure compliance with national procedures and provide assistance, as necessary. The necessary space for burial should also be considered at the site planning stage, particularly in crowded conditions.

*Burial is the simplest and best method of disposal if acceptable to the community.* Health considerations provide no justification for cremation, for which sufficient fuel may often not be available. When possible, traditional practices and customary methods of disposal should be used. Material needs such as cloth for shrouds should also be met.

*Before burial or cremation, bodies must be identified and, if possible, the cause of death recorded.* This is of particular importance for disease control, registration, and tracing. Local government officials may also insist on the issuance of death certificates. If the whereabouts of relatives are known, the most immediate relation should be notified.

Consideration should also be given to the need to relocate bodies from burial sites after the emergency situation is over and the displaced people are able to return to their homes. This may require further involvement with the local government. A burial location map should be kept from the start of the emergency to aid in locating bodies for removal.

**Table 1**

<b>WATER NEEDS FOR DISPLACED PEOPLE</b>							
Water in 1,000,000 liter increments							
<b>Population</b>	<b>Time (days)</b>						
	<b>1</b>	<b>30</b>	<b>60</b>	<b>90</b>	<b>120</b>	<b>180</b>	<b>365</b>
500	0.0075	0.225	0.450	0.675	0.900	1.350	2.7375
1,000	0.015	0.450	0.900	1.350	1.800	2.700	5.475
5,000	0.750	2.250	4.500	6.750	9.000	13.5	27.375
10,000	0.15	4.5	9.0	13.5	18.0	27.0	54.75
20,000	0.3	9.0	18.0	27.0	36.0	54.0	108.6
50,000	0.75	22.5	45.0	67.5	90.0	135.0	273.75
100,000	1.5	45.0	90.0	135.0	180.0	270.0	547.5
500,000	7.5	225.0	450.0	675.0	900.0	1,350.0	2,737.5
1,000,000	15.0	450.0	900.0	1,350.0	1,800.0	2,700.0	5,475.0
<b>Formula: 15 liters x no. people x days = liter/day</b>							

**Table 2**

<b>Weight for Height</b>					
Young children, 52-108 cm in height (sexes combined)					
<b>Height (cm)</b>	<b>Weight (kg.)</b>				
	<b>Std</b>	<b>90 % Std</b>	<b>80 % Std</b>	<b>70 % Std</b>	<b>60 % Std</b>
52	3.8	3.4	3.0	2.7	2.3
53	4.0	3.6	3.2	2.8	2.4
54	4.3	3.9	3.4	3.0	2.6
55	4.6	4.1	3.6	3.2	2.7
56	4.8	4.3	3.8	3.4	2.9
57	5.0	4.5	3.9	3.5	3.0
58	5.2	4.7	4.2	3.6	3.1
59	5.5	4.9	4.4	3.8	3.3
60	5.7	5.1	4.6	4.0	3.4
61	6.0	5.4	4.8	4.2	3.6
62	6.3	5.7	5.0	4.4	3.8
63	6.6	5.9	5.3	4.6	3.9
64	6.9	6.2	5.5	4.8	4.1
65	7.2	6.5	5.8	5.0	4.3
66	7.5	6.8	6.0	5.3	4.5
67	7.8	7.0	6.2	5.5	4.7
68	8.1	7.3	6.5	5.7	4.9
69	8.4	7.6	6.7	5.9	5.0
70	8.7	7.8	7.0	6.1	5.2
71	9.0	8.1	7.2	6.2	5.3

**Table 2 (continued)**

<b>Weight for Height</b>					
Young children, 52-108 cm in height (sexes combined)					
<b>Height (cm)</b>	<b>Weight (kg.)</b>				
	<b>Std</b>	<b>90 % Std</b>	<b>80 % Std</b>	<b>70 % Std</b>	<b>60 % Std</b>
72	9.2	8.3	7.4	6.4	5.5
73	9.5	8.5	7.6	6.6	5.6
74	9.7	8.7	7.8	6.8	5.8
75	9.9	9.0	8.0	6.9	5.9
76	10.2	9.2	8.3	7.1	6.1
77	10.4	9.4	8.3	7.2	6.2
78	10.6	9.5	8.5	7.4	6.4
79	10.8	9.7	8.6	7.5	6.5
80	11.0	9.9	8.8	7.7	6.6
81	11.2	10.1	9.0	7.8	6.7
82	11.4	10.3	9.1	8.0	6.8
83	11.6	10.4	9.2	8.1	6.9
84	11.8	10.6	9.4	8.3	7.1
85	12.0	10.7	9.6	8.4	7.2
86	12.2	11.0	9.8	8.5	7.3
87	12.4	11.1	9.9	8.6	7.4
88	12.6	11.3	10.1	8.8	7.6
89	12.8	11.5	10.2	9.0	7.7
90	13.1	11.8	10.5	9.2	7.9
91	13.4	11.9	10.7	9.3	8.0

**Table 2 (continued)**

<b>Weight for Height</b>					
Young children, 52-108 cm in height (sexes combined)					
<b>Height (cm)</b>	<b>Weight (kg.)</b>				
	<b>Std</b>	<b>90 % Std</b>	<b>80 % Std</b>	<b>70 % Std</b>	<b>60 % Std</b>
92	13.6	12.2	10.9	9.5	8.2
93	13.8	12.4	11.0	9.6	8.3
94	14.0	12.6	11.2	9.8	8.4
95	14.3	12.8	11.4	10.0	8.5
96	14.5	13.1	11.6	10.2	8.7
97	14.7	13.3	11.8	10.3	8.8
98	15.0	13.5	12.0	10.5	9.0
99	15.3	13.7	12.3	10.7	9.2
100	15.6	14.0	12.5	10.9	9.4
101	15.8	14.2	12.6	11.1	9.5
102	16.1	14.5	12.9	11.3	9.7
103	16.4	14.7	13.2	11.5	9.8
104	16.7	15.0	13.4	11.7	10.0
105	17.0	15.3	13.6	11.9	10.1
106	17.3	15.6	13.8	12.1	10.4
107	17.6	15.9	14.0	12.3	10.5
108	18.0	16.2	14.4	12.6	10.8

Values derived from **A Guide To Food and Health Relief Operations for Disasters**, United Nations, 1977.

**Table 3**

<b>Weight and Height for Age</b>						
Birth to 60 months, 6-month intervals (sexes combined)						
Age (mos.)	Weight (kg.)			Height (cm)		
	Std	80 % Std	60 % Std	Std	80 % Std	60 % Std
0	3.4	2.7	2.0	50.4	40.3	30.2
6	7.4	5.9	4.5	65.8	52.6	39.5
12	9.9	7.9	6.0	74.7	59.8	44.8
18	11.3	9.0	6.8	81.4	65.1	48.8
24	12.4	9.9	7.5	87.1	69.6	52.2
30	13.5	10.8	8.1	91.8	73.4	55.1
36	14.5	11.6	8.7	96.0	76.8	57.6
42	15.5	12.4	9.3	99.7	79.7	59.8
48	16.5	13.2	9.9	103.3	82.6	62.0
54	17.4	14.0	10.5	106.8	85.4	64.1
60	18.4	14.7	11.0	109.0	87.1	65.3

## Table 4

### Examples of 1900 KCAL Rations (per person per day)

Rations (quantity in grams)			
Items	Option 1	Option 2	Option 3
Wheat flour/maize meal/rice	400	400	400
Pulses	60	20	40
Oils/fats	25	25	25
Fortified cereal blend*	-	30	-
Canned fish/meat	-	-	20
Sugar	15	20	20
Salt	5	5	5
<b>Total In Grams:</b>	<b>505</b>	<b>500</b>	<b>510</b>
<b>Approximate Food Value:</b>			
energy (kcal)	1930	1930	1930
protein (g)	45	45	45
fat (g)	45	45	45

\* Such as corn-soy-blend and wheat-soy-blend

**NOTE:** All rations (1, 2, and 3) provide at least minimum quantities of energy, protein, and fat.

Ration 2 provides additional quantities of various micronutrients through the inclusion of a fortified blended cereal. Fresh foods (e.g., vegetables and fruits), condiments, and spices should be available whenever possible.

Fortified cereal blends are good sources of micronutrients; and when provided in the ration, should be used for the whole family.

**Table 5**

<b>Examples of Enhanced Rations (per person per day)</b>		
<b>Rations (quantity in grams)</b>		
<b>ITEMS</b>	<b>Option 1</b>	<b>Option 2</b>
Maize meal/wheat flour	400	450
Pulses	40	50
Oils/fats	25	25
Fortified cereal blend*	30	50
Canned fish/dried fish	60/40	30
Sugar	20	20
Salt	5	5
Vegetables/fruit	150	-
Condiments/spices	as av	as av.
<b>Total In Grams:</b>	<b>710-730</b>	<b>630</b>
<b>Approximate Food Value:</b>		
energy (kcal)	2250	2325
protein (g)	65	80
fat (g)	55	55

\* Such as corn-soy-blend and wheat-soy-blend.

**Table 6**

<b>Food Needs for Displaced Persons</b>							
<b>food in MT, based on 500 g/person/day need (1 MT = 1,000 kg)</b>							
<b>Population</b>	<b>Time (days)</b>						
	<b>1</b>	<b>30</b>	<b>60</b>	<b>90</b>	<b>120</b>	<b>180</b>	<b>365</b>
250	.13	3.8	7	11.3	15	22.5	45.6
500	.25	7.5	15	22.5	30	45	91.25
1,000	.5	15	30	45	60	90	182.5
5,000	2.5	75	150	225	300	450	912.5
10,000	5	150	300	450	600	900	1,825
20,000	10	300	600	900	1,200	1,800	3,650
50,000	25	750	1,500	2,250	3,000	4,500	9,125
100,000	50	1,500	3,000	4,500	6,000	9,000	18,250
500,000	250	7,500	15,000	22,500	30,000	45,000	91,250
1,000,000	500	15,000	30,000	45,000	60,000	90,000	182,500

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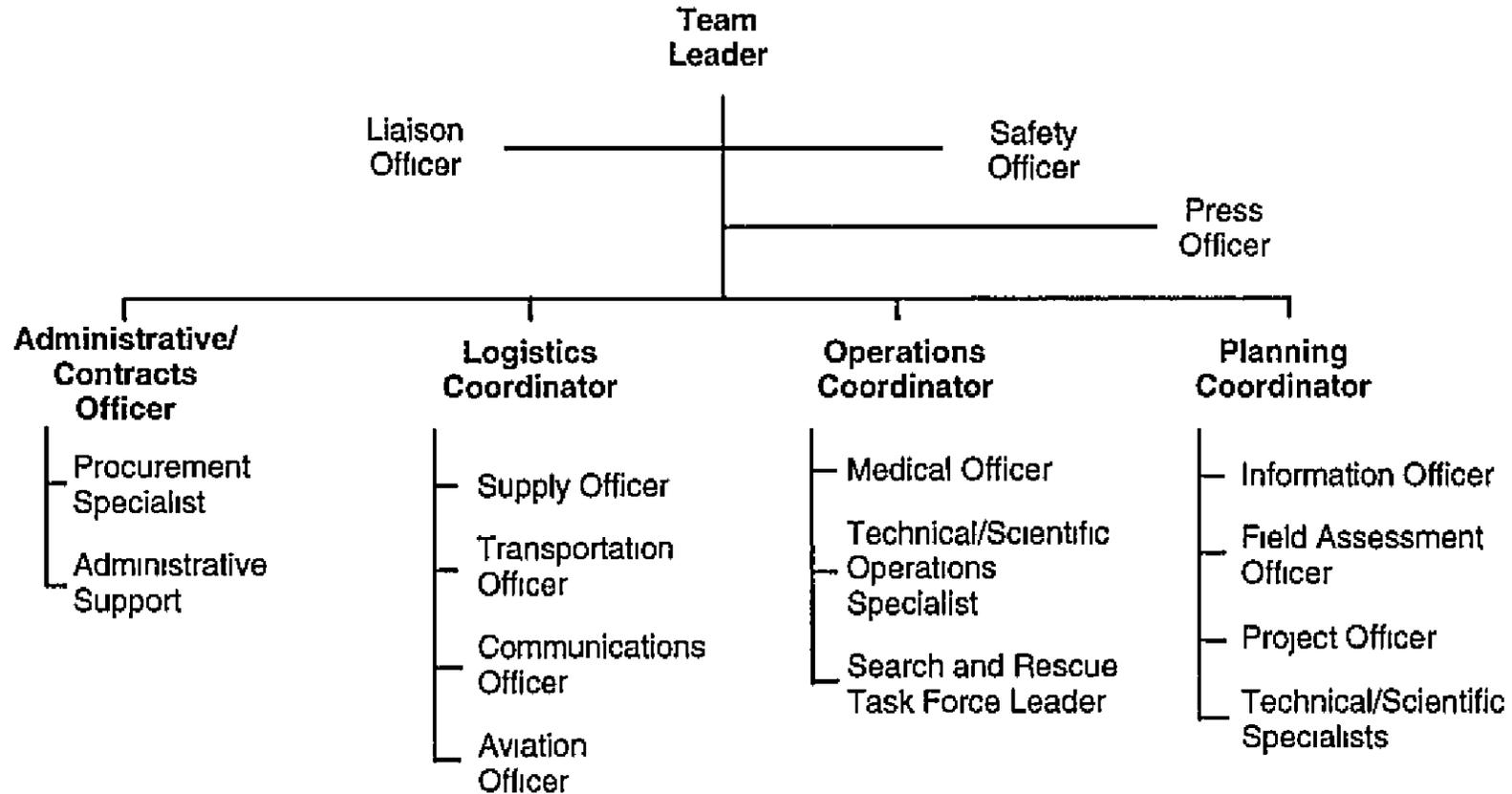
**Table 7**  
**Approximate Nutritional Values of Commodities**  
**Per 100-Gram Edible Portion**

Commodity		Energy (kcal)	Protein (g)	Fat (g)
<b>Cereals</b>	Wheat	330	12.3	1.5
	Wheat flour	350	11.5	1.5
	Bulgur wheat	350	11.0	1.5
	Maize	350	10.0	4.0
	Maize meal	360	9.0	3.5
	Sorghum	335	11.0	3.0
	Rice	360	7.0	0.5
	Rolled oats	380	13.0	7.0
<b>Blended Foods</b>	Instant corn soya blend	365	12.2	4.0
	Corn soya blend	380	18.0	6.0
	Wheat soya blend	370	20.0	6.0
	Soya fortified bulgur wheat	350	17.0	1.5
	Soya fortified corn meal	360	13.0	1.5
	Soya fortified rolled oats	375	21.0	6.0
	Soya fortified wheat flour	360	16.0	1.3
<b>Pulses</b>	Dried peas and beans	335	22.0	1.5
	Ground nuts	330	15.0	25.0
<b>Milk, Cheese and Eggs</b>	Dried skim milk	360	36.0	1.0
	Dried whole milk	500	26.0	27.0
	Cheese	355	22.5	28.0
	Dried eggs	575	45.5	43.5
<b>Meat and Fish</b>	Canned meat	220	21.0	15.0
	Dried salted fish	270	47.0	7.5
	Canned fish in oil	305	22.0	24.0
	Fish protein concentrate	390	75.0	10.0
<b>Oils and Fats</b>	Vegetable oil	885	0	100
	Butter oil	860	0	98.0
	Margarine	735	0	82.0
	Edible fat	900	0	100
<b>Fruits and Beverages</b>	Dried fruit	270	4.0	0.5
	Dates	245	2.0	0.5
	Jam	265	0	0
	Tea	0	0	0
	Coffee	0	0	0
<b>Miscellaneous</b>	Sugar	400	0	0
	Iodized salt	0	0	0
	Pasta	365	12.5	1.2
	Freeze-dried meat	480	65.0	25.0
	Minestrone	500	22.5	27.0
	Protein-enriched ration	450	16.7	15.5
	Milk biscuits (whole milk)	470	23.4	10.4
	Milk biscuits (skim milk)	375	24.0	1.5
	High-protein biscuits	450	50.0	20.0

## **Chapter III**

# **Disaster Assistance Response Team (DART)**

# DART Organization



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# Disaster Assistance Response Team (DART)

## Overview

USAID's OFDA has developed a response capability called the Disaster Assistance Response Team (DART) as a method of providing rapid response assistance to international disasters, as mandated by the Foreign Assistance Act. A DART provides specialists trained in a variety of disaster relief skills to assist U.S. Embassies and USAID Missions with the management of the United States Government (USG) response to disasters

The activities of a DART vary depending on the type, size, and complexity of disasters to which the DART is deployed.

### A. Purpose

During rapid onset disasters, the focus of a DART is to:

- Coordinate the assessment of the situation and report on the needs
- Recommend USG response actions.
- Manage USG on-site relief activities (e.g , search and rescue and air operations).
- Manage the receipt, distribution, and monitoring of USG-provided relief supplies.

During long-term, complex disasters, the focus of a DART is to

- Gather information on the general disaster situation.
- Assess the effectiveness of the overall humanitarian response
- Identify the needs not being met by current overall response efforts
- Monitor the effectiveness of current USG funded relief activities
- Review proposals of relief activities for possible future funding
- Advise USAID/Embassy on disaster issues.
- Make recommendations to OFDA Washington on follow-on strategies and actions
- Implement procuring of contractual and grant services under special circumstances.

During either type of disaster response, DART's coordinate their activities with the affected country, private voluntary organizations (PVO's), nongovernmental organizations (NGO's), international organizations (IO's), and other assisting countries. When U.S.

military assets are involved with the disaster response, the DART will work closely with those assets to assure a coordinated effort by USG resources

## **B. Structure**

The structure of a DART is dependent on the size, complexity, type and location of the disaster, and the needs of the USAID/Embassy and the affected country. The number of individuals assigned to a DART is determined by how many people are required to perform the necessary activities to meet the strategy and objectives. A description of each DART position is provided in this chapter.

A DART is composed of five functional areas:

**Management**—Manages overall DART activities including liaison with the affected country, PVO's/NGO's/IO's, other assisting countries, and U.S. military; and the development and implementation of plans to meet strategic objectives.

**Operations**—Manages all operational activities carried out by the DART such as search and rescue activities, technical support to an affected country, medical and health response, and aerial operations coordination. Most active during rapid onset disasters.

**Planning**—Collects, evaluates, tracks, and disseminates information about the disaster. Reviews activities and recommends future actions. Develops the DART operational (tactical) plan.

**Logistics**—Supports the DART with team supplies, equipment, and services. Orders, receives, distributes, and tracks USG-provided relief supplies.

**Administration**—Manages fiscal activities of the DART. Contracts and procures goods and services required by the DART. Provides cost accounting of DART activities

## **C. DART Activation and Deployment**

The decisions on a DART's activation, composition, and mission are made at a disaster response planning meeting held in OFDA.

The DART is organized and supervised by a DART team leader selected by OFDA. The team leader receives a delegation of

authority from and works directly for the assistant director of OFDA's disaster response division or his/her designee. The delegation lists the objectives, priorities, constraints, and reporting requirements for the DART. Based on this information, the team leader in conjunction with the assistant directors for OFDA's Disaster Response and Operations Support Divisions will identify the other positions needed. OFDA's assistant director for the Operations Support Division has the responsibility for filling DART personnel requirements, supporting DART field operations, and ensuring security for the DART throughout the operation.

Prior to departure, the team leader will attempt to contact the USAID/Embassy (if present in the affected country) to discuss the situation, review the DART's structure, size, objectives, and capabilities, and identify the areas of support needed by the DART in country.

Upon arrival in an affected country, the team leader reports to the senior U.S. official or to appropriate affected country officials, to discuss the DART's objectives and capabilities, and to receive additional instructions and/or authority. While in the affected country, the team leader advises and may receive periodic instructions from USAID/Embassy. Those instructions will be followed to the extent they do not conflict with OFDA policies, authorities, and procedures. The team leader maintains a direct line of communications with OFDA Washington throughout the operation.

The duration of a DART operation will be determined by USAID/Embassy and OFDA Washington after reviewing the disaster situation and the progress of the DART in meeting its objectives.

The DART organizational chart in this guide portrays the positions and relationships described in the *Field Operations Guide (FOG)*. The following position descriptions and checklists describe roles and responsibilities for DART members. The position descriptions are grouped according to their functional areas. They are also applicable for defining the roles and responsibilities of members of OFDA Assessment Teams.

There are additional positions under the Search and Rescue Task Force leader which are described in the Federal Emergency Management Agency's *Urban Search and Rescue Response System Field Operations Guide*.

## **General Checklist for All DART Members**

### **Pre-Departure:**

- Establish contact with your supervisor and receive a briefing on:
  - The latest situation status of the disaster.
  - DART objectives and priorities.
  - Scope of your assignment within the DART.
  - Organizational structure of the DART.
  - Visa and immunization requirements.
  - Special equipment needs.
  - Functional staffing needs
  - Travel arrangements and coordination with OFDA
- Check on availability of local maps.
- Inform supervisor of in-country support needs.
- Contact unit personnel, brief them, and ensure their preparedness.
- Ensure equipment is acquired, prepared, and ready for shipment
- Notify Embassy through cable, the type, amount, and serial numbers of all equipment being taken by the team into the affected country.
- Review personal and team support checklists.
- Review position description in DART Manual.
- Leave family name and contact numbers with OFDA.
- Leave family with power of attorney.

### **In Travel:**

- Acquire and review briefing materials from supervisor including:
  - Affected country profile.
  - USAID/Embassy disaster relief plan
  - State Department background notes
  - Disaster history.
  - Lessons learned from previous responses.
  - In-country contact list.
  - Maps.
- Discuss the following with your DART supervisor:
  - Response strategy.
  - Known cultural sensitivities of affected country.
  - Role of USAID/Embassy and affected country officials.
  - Initial work assignment.
  - Daily shift and briefing procedures including time schedules

- Ordering and procurement procedures.
- Property accountability.
- Type of documentation required.
- Reporting requirements by individual and team.
- Media contact philosophy and procedures.
- Policy on communicating with family members.

### **In Country:**

#### **Immediate Actions:**

- Perform initial evaluation of situation from your functional point-of-view.
- Discuss situation with USAID/Mission, local officials, other assisting country teams and PVO's/NGO's/IO's as appropriate.
- Assess affected country and other response organizations' abilities to manage the situation.
- Determine additional requirements (personnel, equipment, facilities, logistical support) and make recommendations to the supervisor
- Provide inputs to your supervisor for the initial team operational planning process.
- Implement initial team operational plan.

#### **Ongoing Actions:**

- Contribute to the team operational planning process
- Provide leadership and technical guidance and resolve any coordination and personnel problems within function.
- Inform supervisor and others of current situation as needed, including:
  - Work accomplishments.
  - Inability to operate as planned.
  - Potential political problems.
  - Internal and external coordination problems.
  - Shortage or surplus of resources.
  - Accidents involving assigned resources.
- Coordinate continuously as directed with affected country local officials, USAID/Embassy, other response teams, and PVO's/NGO's/IO's.
- Record significant actions and events in unit log each day and submit to supervisor or planning function.
- Constantly critique operation of function and recommend changes to supervisor.
- Evaluate ability of assigned resources to meet demands.
- Review need for replacement of supplies, equipment, and personnel. Request more as needed.
- Identify evidence of public health problems.
- Constantly monitor activities to ensure they are carried out

- safely
- Monitor team personnel for signs of critical incident stress syndrome.

#### **Demobilization:**

- Review staffing and resource requirements and recommend the release of excess personnel and equipment.
- Coordinate demobilization with supervisor and/or planning function.
- Close out with affected country, and other cooperating organizations as necessary.
- Close out with USAID/Embassy as necessary.
- Account for all your equipment and supplies.
- Prepare non-expendable items for return shipment, including completion of customs documents
- Evaluate your function's performance including:
  - Lessons learned.
  - Individual performance of unit personnel.
  - Concerns.
  - Future training needs.
  - Recommended changes
- Submit all reports, evaluations, unit logs, and time records to your supervisor or the planning function.
- Review checklist and make recommendations.
- Prepare for and participate in debriefings as requested
- Clean up your work area.

### **Team Leader**

Manages overall DART activities. Responsible for the liaison with the affected country, PVO's/NGO's/IO's, and other assisting countries. Ensures the development and implementation of strategic decisions. Reports to senior U S. official in the affected country. Receives delegation of authority from the assistant director for OFDA's Disaster Response Division, and is responsible to OFDA Washington.

#### **Pre-Departure:**

- In conjunction with the assistant director for Disaster Response, identifies DART positions as needed.
- Receive general briefing from OFDA Washington staff. In addition to the general checklist, discuss:
  - DART objectives and authorities.
  - With USAID/Embassy, disaster situation, DART objectives, capabilities, structure, and in-country DART support needs.

- Political sensitivities relating to the affected country.
- Security situation.
- DART-OFDA reporting, requirements including daily telephone calls, situation reporting, and final disaster report.
- Types of resources which can be requested, resource ordering process, and use of stockpile items
- Affected country's disaster response capability.
- Status of affected country response to the disaster.
- Lessons learned from other disasters in affected country
- Lessons learned from other disasters of this type
- Other international response to the disaster (countries and organizations)
- PVO's/NGO's/IO's with programs in the affected country.
- Points of contact at USAID/Embassy.
- Points of contact with the affected country government
- Coordination of international response through the U.N. and points of contact. Other coordination activities among PVO's/NGO's/IO's, and donor community.
- Media guidance.
- Fiscal authorities, restrictions, and reporting.
- Deployment time frame.
- Brief OFDA staff and discuss staffing requirements, in-country support requests, and special travel needs.
- Ensure the acquisition and preparation of team support list items.
- Ensure adequate communications equipment is ordered for all functions.
- Ensure DART has capability to fiscally support itself upon arrival in affected country.
- With planning coordinator and OFDA staff, conduct initial DART briefing.
- Cover all items under "IN TRAVEL" in checklists.

### **In Country:**

#### **Immediate Actions:**

- Report immediately to the senior USAID/Embassy official, present DART capabilities and objectives, and receive briefing. Discuss security, disaster, and international response activity update, USAID/Embassy lines of authority, reporting requirements, support capability of USAID/Embassy for personnel, equipment, storage, work space, transportation, and personnel.
- With planning coordinator, formulate an initial team operational plan based on immediate evaluations from all functions, and briefing from USAID/Embassy.

- Notify OFDA Washington of DART's arrival, initial information obtained, and initial actions taken by the DART
- Locate a DART headquarters and get set up. It should be close to USAID or the U.S. Embassy or close to the disaster site.
- With administrative/contracts officer, meet with key USAID/Embassy officials, including USAID controller and/or Embassy budget and fiscal officer to discuss OFDA procurement procedures (See Handbook 8, chapter 5), and fiscal requirements of team (local currency).
- If initial operational plan requires immediate tactical response or logistical support, ensure deployment of required personnel and equipment.
- Identify potential locations for warehousing, airport staging, storage, and administrative operations.
- Develop staff work schedule.
- Oversee the development of situation reporting, operational planning, resource tracking, documentation, and commodity consignment systems.
- Establish contact with other assisting country teams, PVO's/NGO's/IO's.
- Establish contact with the appropriate affected country ministries as necessary.
- Discuss potential safety issues and future technological problems with safety officer and technical/scientific specialists.
- Discuss appropriate media activities with press officer.
- Determine additional requirements (personnel, equipment, facilities, logistical support). Identify these to USAID/Embassy and OFDA and make recommendations.

#### **Ongoing Actions:**

- With planning coordinator, conduct regular planning briefing and debriefing sessions. Ensure regular attendance and contributions from all DART members into the team operational planning process. Review ground rules on press contact, contact with the USAID/Embassy, the affected country and other organizations.
- Maintain close communication with OFDA. Inform of current situation, work progress, problems, planned actions, effectiveness of response, condition, and performance of DART members
- Review and clear sitreps.
- Maintain close communication with senior USAID/Embassy official. Ask that official to explain mission of the DART to the Country Team.

- Coordinate continuously with affected country representatives, other assisting teams and PVO's/NGO's/IO's. Promote coordination among the PVO's/NGO's/IO's and donor communities.
- Conduct daily critique of all functions for effectiveness, validity of priorities, sound objectives, and ability of DART members to carry out assignments. Institute changes as necessary.
- Constantly foster open communications with USAID/Embassy to ensure their continued support of the DART and that the DART is meeting their needs. Keep them informed of DART activities and progress.
- Ensure all DART members maintain daily unit logs.

#### **Demobilization:**

- Oversee the development of the DART demobilization plan. Review plan with USAID/Embassy and OFDA.
- Review all documentation such as video tapes, pictures, logs, and sitreps.
- Analyze the impact of short-term relief activities on the long-term reconstruction program.
- Identify additional final disaster report requirements and assign responsibilities as required.
- Participate in writing and reviewing final disaster report.
- Ensure all fiscal agreements are concluded
- Ensure requested documentation and final disaster report is distributed to local USAID/Embassy prior to departure.
- Debrief senior USAID/Embassy official.
- Notify OFDA of final demobilization arrangements.
- Prepare and conduct debriefing with OFDA staff in Washington.
- Submit final disaster report to OFDA.

#### **A. Press Officer**

Manages DART media activities. Reports directly to the team leader.

#### **Pre-Departure:**

- Contact the team leader and receive general briefing. In addition to the general checklist, discuss:
  - Media philosophy for this disaster, including level and type of coverage desired.
  - In-country press officer support needs (for cable to USAID/Embassy).

- Obtain information on USG response activities to date including commodities delivered, in route, and requested from OFDA logistics officer.
- Obtain information on response actions of other assisting countries, and PVO's/NGO's/IO's (from OFDA information management contractor or INTERACTION).
- Obtain all press releases pertaining to the disaster.
- Obtain information on media organizations currently covering the disaster.
- Coordinate the acquisition and shipping of press function equipment, including press release guidelines, disaster operations press guidelines, operations manual for media equipment, and office supplies. Specify weight, cubes, and number of pieces and arrange for special handling requirements.
- Organize press coverage at DART departure site.

### **In Country:**

#### **Immediate Actions:**

- Perform immediate initial evaluation of media situation. Discuss current activities with local officials, USAID/Embassy (USIS), other assisting country teams, and PVO's/NGO's/IO's.
- Meet with USAID/Embassy (USIS) and obtain the following information:
  - Current and planned media activities.
  - Disaster affects on population and property
  - Media management policy (picture taking, filming)
  - Current press organization in operation.
  - Affected country media sensitivities.
  - Support facilities available for briefings
  - Availability of local equipment such as computers, typewriters, copy machines, etc.
- Obtain copy of any new press releases pertaining to the disaster.
- Obtain list of international and local media presently covering the disaster.
- Obtain and review USAID/embassy disaster relief plan and emergency action plan.
- With Information Officer and Planning Coordinator, establish procedures for press visits to DART headquarters (access to visual displays, maps, situation reports, resource status information).
- With operations coordinator, discuss press visits to work sites.
- Evaluate need for additional personnel and resources to meet press function needs.

### **Ongoing Actions:**

- Ensure a balanced coverage of team activities.
- Keep team leader informed of all press activities in advance.
- Ensure proper safety practices are observed during work site visits
- Keep DART members informed of U.S. and international news coverage.
- Keep USAID/OFDA public affairs officers informed.
- Coordinate continuously with local officials, USAID/Embassy (USIS), other assisting country teams, and PVO's/NGO's/IO's
- Assist USAID/Embassy (USIS) in arranging and conducting VIP visits.

### **Demobilization:**

- Give technical debriefing to USAID/OFDA public affairs officer.

### **B. Safety Officer**

Identifies hazards and risks to DART personnel and oversees the adherence to safe practices and standards. Reports directly to the team leader.

### **Pre-Departure:**

- Contact the team leader and receive general briefing. In addition to the general checklist, discuss:
  - Safety concerns at disaster site.
- Meet with operations coordinator to discuss operational issues
- Coordinate the acquisition of office and field supplies.

### **In Country:**

#### **Immediate Actions:**

- Perform immediate initial evaluation of safety situation. Discuss conditions, security, hazards and needs with local officials, USAID/Embassy, other assisting country teams, and PVO's/NGO's/IO's. Determine best use of safety function.
- If plan requires immediate logistics and operations functions activation, begin assessing safety issues of the operation
- Perform thorough evaluation of operational areas. Identify, mark and document potential hazards and unsafe situations. Notify DART members in the area immediately.
- Brief entire team on unsafe conditions. Recommend protective and preventative actions.

- Ensure safety standards and practices are observed in all operations.
- Investigate all DART accidents. Document and file.
- Develop medical evacuation plan including location of medical facilities, transportation, telephone numbers, and radio frequencies. Give copy of plan to planning function, transportation and aviation officers, logistics and operations coordinators, and USAID/Embassy
- Evaluate the need for additional personnel and resources to safely meet objectives.

#### **Ongoing Actions:**

- Continuously monitor DART operations for adherence to safety practices and standards.
- Continuously monitor DART members for signs or symptoms of critical incident stress syndrome. Recommend rest, stress debriefing, or demobilization.
- Provide safety plan information to planning function for inclusion in operational plan. Plan can include reviews of air operations, vehicle safety, hazard maps, hazardous materials, safe working practices at work sites, personal and visitor safety (media), reporting of hazards, the emergency medical plan (first aid through medivac), reporting of accidents, accident investigation, and scheduling safety meetings.

#### **Demobilization:**

See general checklist

#### **B. Liaison Officer**

Coordinates DART liaison function. Serves as the point of contact with affected country, USAID/Embassy, U.S. military, other assisting country teams, and PVO's/NGO's/IO's. Identifies political and operational concerns of these groups. Reports directly to the team leader.

#### **Pre-Departure**

- Contact the team leader and receive general briefing. In addition to the general checklist, discuss.
  - Liaison concerns and needs at disaster.
  - Relationships among major respondents participating in the disaster relief activities.

## **In Country:**

### **Immediate Actions:**

- Perform immediate initial evaluation of coordination situation
- Identify yourself as the DART point of contact to USAID/Embassy, affected country officials, U.S. military, other assisting country teams and PVO's/NGO's/IO's. Discuss with them disaster needs and coordination issues.
- Obtain necessary credentials for identification and appropriate security clearances.
- Establish the points of contact with the above groups, including communications links and locations.

### **Ongoing Actions:**

- Respond to requests from DART personnel for interorganizational contacts.
- Monitor disaster operations to identify current or potential interorganizational problems.
- Remain visible and available at the disaster to affected country officials, U S. military, other assisting countries, and PVO's/NGO's/IO's.
- Offer methods to coordinate and support disaster response activities among the above groups.
- Maintain a current list of liaison contacts for above groups and provide to other DART members as needed.
- Share DART reports and accomplishments with the above groups.
- Document liaison activities

## **Demobilization:**

See general checklist

## **Logistics Coordinator**

Manages and supervises logistical, aviation, and communications support to the DART with team supplies, equipment, and services. Orders, receives, distributes, and tracks USG-donated relief commodities. Reports directly to the team leader.

### **Pre-Departure:**

- Contact the team leader and receive general briefing. In addition to the general checklist, discuss
  - In-country logistical support needs to be communicated to USAID/Embassy.

- Contact OFDA logistics officer and discuss the following:
  - Resource ordering procedures.
  - Current resources requested of USG by affected country. Obtain list.
  - Status of OFDA stockpile items and stockpile usage procedures.
  - Availability of in-country support services.
- Contact logistics function personnel. Brief and ensure preparedness.
- Coordinate the acquisition and shipping of team equipment and supplies. Specify weight, cubes, and number of pieces and arrange for special handling requirements as needed.
- Ensure adequate communication equipment is ordered, considering ground-to-air, command, and logistical needs and the ability to link DART headquarters with OFDA/ Washington and USAID/Embassy for voice and data transmissions

### **In Country:**

#### **Immediate Actions:**

- Define and acquire immediate needs of the DART.
- Perform immediate evaluation of logistical situation. Discuss needs with operations coordinator, USAID/Embassy, affected country officials, other assisting country teams, and PVO's/NGO's/IO's.
- Assess affected country and other response organizations' abilities to manage situation.
- Determine whether to activate transportation and supply units
- If initial plan requires immediate logistical support, assist in selecting work site, set up equipment, and begin operation.
- Set logistics staff work schedules.
- Oversee establishment of an accountability and management system for team equipment and supplies and relief commodities. System will include: receiving, inventorying, storing, security, and tracking equipment, supplies, and commodities. Use forms (see forms and instructions chapter in FOG) as needed.
- Establish DART logistical support requests process
- Establish contacts with USAID/Embassy, affected country, or other groups to obtain the following information:
  - Airport/port operation procedures, capabilities, and conditions including landing/quay costs, customs inspections, unloading and loading support equipment, storage, security, fuel availability, communications systems in use, and access by ground vehicle.

- Capabilities, availability, and use of USAID/Embassy transportation
- USAID/Embassy supply procedures.
- Local warehousing capabilities and conditions.
- Local power source requirements.
- Availability of local hire of personnel for logistical support.
- Reliable local common carriers (trucks, aircraft, ships).
- Local road conditions.
- Rail capabilities and conditions, if available.
- Use of waivers for expediting resources through customs.
- Discuss procurement and contract procedures with administrative officer.
- Establish local contacts for expediting logistics in-country.
- Oversee preparation of DART transportation plan Submit to planning function.
- Evaluate the need for more personnel or resources to meet needs.

**Ongoing Actions:**

- Review resource requests with team leader.
- Ensure distribution process gets relief supplies to appropriate recipients.

**Demobilization:**

- Ensure logistics and team support equipment is accounted for and prepared for return shipment to United States, including completion of customs documents Ensure appropriate documentation is sent to OFDA.

**A. Supply Officer**

Manages the ordering, receiving, inventorying, storing, issuing, and accounting of OFDA relief commodities. Reports directly to the logistics coordinator.

**Pre-Departure:**

- Coordinate the acquisition and shipping of equipment and office supplies.

**In Country:**

**Immediate Actions:**

- Perform immediate initial evaluation of supply situation.
- Find out the availability of local warehousing, labor, and transportation from affected country officials and USAID/Embassy.

- If plan requires immediate need for supplies, assist in selecting work site, set up equipment, and begin operation
- Obtain following specific information from USAID/Embassy:
  - USAID/Embassy transportation capabilities, availability, and use procedures.
  - USAID/Embassy warehousing availability.
  - USAID/Embassy supply procedures.
  - Use of waivers for expediting resources through customs.
- With administrative officer, locate and contract for warehouse space and equipment and hire local labor as necessary. Discuss procurement procedures for obtaining local supplies.
- Develop staff work schedule for unit.
- Establish locations, facilities, and equipment for receiving, inventorying, storing, and issuing supplies.
- Set up ordering, inventorying, issuing, and tracking systems for team needs and relief supplies. Use forms (see forms and instructions chapter in FOG) as needed.
- Insure above systems can provide fast and accurate information as to what is in storage at any one time and in what quantities.
- Obtain map of area.
- Establish contact with local customs authorities. Learn country laws forms, costs, landing fees, and hours of operation of ports of entry.

#### **Ongoing Actions:**

- Work closely with transportation function to insure coordination of receipt and distribution of relief supplies.
- Insure efficient and accurate receipt of all supplies at storage locations and supervise receipt documentation.
- Take responsibility for both quantity and quality control of supplies delivered to storage locations.
- Prepare and submit stock inventories as requested.
- Inspect storage facilities as needed to ensure procedures in stacking, cleaning, and record-keeping are being adhered to.
- Review need for replacement parts, equipment, and supplies. Provide information on stock levels and anticipated needs and make requests through chain of command. Coordinate this activity with other DART members.
- Place USAID logo stickers on all incoming relief supplies containers
- Ensure proper safety practices and standards are understood and observed.
- Establish, maintain, and supervise adequate security system for the warehouse facilities to prevent both theft and damage to team equipment and supplies or relief supplies.

- Brief local labor on changing situation.
- Take necessary precaution to store and label poisonous or hazardous materials in an appropriate manner.
- Monitor distribution system to ensure that relief supplies are distributed to appropriate recipients.
- Organize and file all relevant documentation

#### **Demobilization:**

- With administrative officer, conclude all contracts (personnel and materials) and payments.
- Make arrangements for disposition of remaining supplies with OFDA and USAID/Embassy.
- Ensure equipment and supplies returning to the United States are accounted for and prepared for shipment, including completion of customs documents. Send appropriate documentation to OFDA
- Ensure that requested documentation is distributed to local USAID/Embassy prior to departure.

#### **B. Transportation Officer**

Manages DART transportation resources. Reports directly to the logistics coordinator.

#### **Pre-Departure:**

- Coordinate the preparation and transport of equipment, tools, and relief supplies.
- Obtain transportation system maps
- Insure adequate communications equipment will be available for vehicles.

#### **In Country:**

##### **Immediate Actions:**

- Perform immediate initial evaluation of transportation situation. Discuss transportation needs with operations coordinator.
- Make determination on need to rent vehicles and drivers immediately.
- Obtain map of city(s)/region.
- Develop interim transportation plan if needed.
- If plan requires immediate vehicle use, arrange for the loan and/or rental of vehicles, and establish a base of operations.
- Establish contacts with affected country officials, USAID/Embassy, other assisting country teams, and PVO's/NGO's/IO's to obtain the following information.
  - General road conditions
  - Locations of hazardous or impassable areas.

- Fuel availability.
- Availability of local drivers.
- List of reliable local common carriers.
- Availability of local maintenance.
- Local insurance requirements.
- Local driving laws and requirements.
- Discuss procurement and contract procedures with administrative officer
- With administrative officer, obtain the use of necessary vehicles. Inspect and document.
- Plan the loading, accounting, dispatching, and tracking system for relief supplies with the supply officer.
- Establish locations for maintenance, fueling, and cleaning vehicles.
- Establish vehicle management process including the following issues: inspection, storage, security, tracking, registration, insurance, mileage recording, and maintenance of vehicles.
- Ensure an adequate fuel supply system.
- Use DART forms (see forms and instructions chapter in FOG) as needed.
- Establish DART transportation support requests process
- Ensure that daily logs are kept on all vehicles to record mileage, tune-ups, oil changes, etc
- Learn local transportation laws, restrictions, traffic patterns, hours, and customs.
- Establish contact with local customs authorities. Learn country laws forms, costs, landing fees, and hours of operation of ports of entry.
- Prepare and submit complete DART transportation plan to planning function, including routes of travel, time and location of departure and pickup, and assignments of vehicle and driver. Include maps for drivers.
- Control traffic flow around supply area and DART headquarters.

**Ongoing Actions:**

See general checklist.

**Demobilization:**

- Inspect rental vehicles after use. Document.
- With administrative officer, conclude all contracts (personnel and vehicles) and payments
- Ensure that requested documentation is distributed to local USAID/Embassy prior to departure.

## C. Aviation Officer

Manages DART aviation resources. Reports directly to the logistics coordinator. The aviation officer may perform a logistical function such as managing aerial transportation, or an operational function such as managing aerial spraying

### Pre-Departure:

- Contact OFDA logistics officer and obtain:
  - Copies of aircraft contracts to be used in the disaster.
  - List of capabilities and requirements of aircraft that may be used to support the disaster, such as C-141, C-130, 727, or DC-6.
  - Information on availability of aircraft and of fuel, oil, and spare parts in-country.
- Contact OFDA contracts officer and review aircraft contracts.
- Coordinate the acquisition and shipping of equipment, tools, and supplies, including maps for air transportation planning, Locust Handbook, spray charts, airport maps, forms, and office supplies as necessary.
- Determine what assistance the USAID/Embassy will be giving to the DART, such as customs, overflight clearance, and transportation.
- What other donor countries, or NGO's/PVO's/IO's are operating aircraft in the affected country.

### In Country:

#### Immediate Actions:

- Perform initial evaluation of aviation situation.
- Locate airport nearest to disaster site. Tour airport to determine adequacy for DART needs.
- Identify air transportation and air operations needs of operations and logistics functions.
- Establish contacts with affected country officials, USAID/Embassy, other assisting country teams, and PVO's/NGO's/IO's to obtain the following information on the airport in the area of the disaster.
  - Length/width of runways.
  - Elevation of runways.
  - Condition of runways.
  - Acceptability of DOD aircraft.
  - Landing fees and hours of operation.
  - Limitations and hazards.
  - Use of aircraft for spray and recon missions.
  - Frequencies in use.
  - Availability of local labor for hire.

- Customs laws and associated costs.
- Availability of local aircraft, pilots, maintenance personnel and fuel.
- Search and rescue plan with local medical facilities and the capabilities of those facilities.
- Determine need to rent aircraft for DART activities. If DART operational plan requires immediate air transportation or air operations, set up air operations office (preferably at airport), and arrange for rental of aircraft with the administrative/contracts officer, if necessary, and begin operation.
- Obtain maps of area for pilots.
- Discuss procurement and contract procedures with administrative function, including fees, fueling, and support services payment.
- Meet with customs officials and discuss advanced clearance of relief supplies.
- Establish area for fueling away from operations. Ensure adequacy of quantity and quality of fuel. Mark area and set up safety equipment
- Establish area and procedures for loading and unloading aircraft. Control access to aircraft and loading/supply area. If loading pesticides for spraying, ensure all safety equipment and procedures are used.
- Establish systems for pilot briefings and scheduling, passenger briefings, manifesting passengers and cargo, flight following, transferring information on manifests, receiving supplies, and monitoring contracts. Use DART forms (see forms and instructions chapter in FOG) as needed

#### **Ongoing Actions:**

- Ensure aviation safety is strictly enforced
  - Adhere to IATA and FAA regulations on packaging and transportation of hazardous materials.
  - Ensure that ATC rules and operators flight manuals are observed.
  - Establish and maintain continuous radio communications with all aircraft (VHFHF). Keep a radio watch during flight operations.
  - Ensure proper protective clothing is worn when handling hazardous materials.
  - Ensure proper safety procedures are used when loading, storing, and handling pesticides.
- Transmit all flight plans to civil aviation authorities for approval.
- Ensure that proper aircraft maintenance is conducted.

- Ensure that pilot duty and flight hour limitations are observed.
- Investigate and document any accidents or spills. Report them to the logistics officer.
- Ensure that all flights are manifested and flight-followed.
- Keep daily statistics of aircraft movements, legs, cargo and passengers flown, and fuel consumption for each aircraft. Keep documentation in secure, weatherproof location.
- Contribute regularly to team operational planning process. Provide input such as aircraft downtime due to maintenance, pilot days off, or poor flying weather.
- Establish and maintain a security system at the airport site to prevent theft and damage to property and supplies.
- Ensure adequate fire prevention.
- Coordinate with supply and transportation units to ensure safe and effective aircraft loading and off-loading procedures.
- Meet daily with operators of contract aircraft and discuss operation and problems. Document and file meeting results.
- Coordinate continuously with local officials, airport manager, USAID/Embassy, and other groups.

#### **Demobilization:**

- With administrative officer, terminate all contracts (personnel and aircraft) and payments.
- Ensure that requested documentation is distributed to local USAID/Embassy prior to departure

#### **D. Communications Officer**

Manages DART communications equipment and systems and develops and implements the DART communications plan. Reports directly to the logistics coordinator.

#### **Pre-Departure:**

- Contact the logistics coordinator and receive general briefing. In addition to the general checklist, discuss:
  - Initial team communication requirements, including:
    - Air-to-ground.
    - Logistics.
    - Planning.
    - Operations.
    - Command.
  - Links between DART headquarters and work sites, OFDA, USAID/Embassy, and PVO's/NGO's/IO's.

- In-country communications support capabilities such as:
  - Frequency authorizations.
  - Availability of services such as USAID/Embassy communications office, AT&T, American Radio Relay League, Air Force MARS, Coast Guard, FCC, and U.N.
- Contact OFDA logistics coordinator and discuss the availability of equipment from other sources (Metro-Dade, Fairfax, Forest Service) to support DART requests.
- Coordinate the acquisition and shipping of communications equipment with the logistics coordinator. Consider need for electrical adapters. Specify weight, cubes, and number of pieces and arrange for special handling requirements.
- Obtain the following items:
  - Required sections of *OFDA Communications Options Manual*.
  - Local communications contacts list.
  - ITU radio regulations.
  - Instruction manuals for equipment.
  - Forms for telephone log, radio log, unit log, messages, medevac plan, communications plan, telephone use plan.
  - ARRL Repeater Directory.
  - Magnetic compass.
  - Computer software documentation
  - *World Radio & TV Handbook*.
- Obtain country frequency list, ONC or TPC maps of disaster area, and basic tool kit for field repairs.
- Review existing communication agreements between United States and affected country.

## **In Country:**

### **Immediate Actions:**

- Perform immediate initial evaluation of communication situation. With DART coordinators, determine communication requirements.
- Contact local affected country communications authority, USAID/Embassy, other assisting country teams, and PVO's/ NGO's/IO's to gain information on the best use of the DART communications assets.
- Obtain information from USAID/Embassy on frequency authorizations, available personnel, and communication and computer equipment and supplies.
- Obtain map of city/area.
- Select communications sites.
- Set up communications office at DART headquarters.
- Develop interim communications plan.

- Set up initial intra-team communications and a link to OFDA Washington.
- Instruct DART members on use of equipment.
- Assess condition of local communication facilities.
- Offer technical assistance to other communications operations.

**Ongoing Actions:**

- Constantly review and update communications plan.
- Assist DART members in the proper use of equipment.
- Keep OFDA informed on changes in communication procedures
- Coordinate continuously with local communications officials, USAID/Embassy communications staff, and other groups.
- Ensure the proper use of frequencies.

**Demobilization:**

- Review communication requirements and recommend to operations coordinator the release of excess personnel and equipment.
- Maintain adequate equipment to support team until departure.
- Ensure equipment is accounted for and prepared for return shipment to United States, including completion of customs documents.

## **Operations Coordinator**

Manages tactical operations such as search and rescue, medical/health, technical support, and aerial operations coordination. Reports directly to the team leader.

**Pre-Departure:**

- Contact the team leader and receive general briefing. In addition to the general checklist, discuss:
  - In-country operational support needs to be communicated to USAID/Embassy.
  - Operational response activities by affected country.
  - Operational response activities pending or in progress by other assisting countries and U N.
  - Type of on-site operational coordination occurring between affected country, assisting countries, NGO's/ PVO's/IO's.
  - Technical or scientific specialists required for the mission.
- Ensure adequate communication equipment is ordered to support anticipated team operations.

## **In Country:**

### **Immediate Actions:**

- Assess affected country and other response organizations' abilities to carry out relief operations. Make determination on best use of operations resources.
- If plan requires immediate tactical response, assist in selecting work site, set up equipment, and begin operation.
- With communications officer, determine communications needs and develop communications plan. Submit to planning coordinator.
- Develop staff work schedule for function, considering the need for 24-hour operation.
- With press officer, establish on-site media management procedures.
- Compile disaster situation analysis with technical/scientific operations specialists (if specialists are on DART).
- If operational plan does not require immediate tactical response, offer technical assistance to existing tactical operations.

### **Ongoing Actions:**

- Contribute regularly to team operational planning process by recommending tactics to meet team objectives.
- Update team leader, planning function, and appropriate staff on current situation, including potential or impending life threatening situations for team members or victims
- Coordinate with logistics function to ensure operational requirements are being met.
- Keep operations staff briefed on changing situation.
- Conduct frequent debriefings with key staff to review problems and work accomplishments.
- Coordinate continuously with affected country response organization, other assisting country response teams, and any on-site coordination organizations such as an on-site operations coordination center (OSOCC). Compliment ongoing activities.

### **Demobilization:**

See general checklist.

## **A. Medical Officer**

Manages medical care operations. Position will be filled on the DART when DART operations include assisting disaster victims directly with medical care units. Reports directly to the operations coordinator

### **Pre-Departure:**

- Contact OFDA/W medical officer and obtain information on the following:
  - Medical capabilities in the affected country and at the disaster site.
  - PVO's/NGO's/IO's working in the affected country and types of programs currently being conducted.
  - Types of USG-sponsored medical personnel and material assets available for disaster response and methods of obtaining them.
  - Any medical responses being planned or carried out by other assisting countries or organizations.
- Ensure any specialized equipment is properly prepared for shipment.
- Contact medical personnel, brief, and ensure preparedness

### **In Country:**

#### **Immediate Actions:**

- Perform immediate initial evaluation of health and medical situation. Discuss needs with local health officials, USAID/Embassy, other assisting country response teams, and PVO's/NGO's/IO's.
- Assess affected country and other response organizations' abilities to manage situation. Make determination on need to activate a medical unit immediately.
- Determine local medical capabilities and contacts.
- If plan requires immediate patient care, assist in selecting work site, set up equipment, and begin operation (if such resources are a part of the DART).
- Develop staff work schedule
- Establish medical priorities. Validate triage process.
- Provide leadership and technical guidance and resolve any coordination and personnel problems within unit.
- Provide backup support and consultation to safety officer, including monitoring and management of critical incident stress syndrome.
- If operational plan does not require immediate patient care, offer technical assistance to existing medical operations

**Ongoing Actions:**

- Ensure that proper medical and health practices and standards are observed.
- Coordinate continuously with search and rescue medical team manager, local Ministry of Health, USAID/Embassy, other response teams, and international organizations.

**Demobilization:**

See general checklist

**B. Search and Rescue Task Force Leader**

Manages search and rescue (SAR) operations. Reports directly to the operations coordinator. Additional information on SAR operational response activities is located in FEMA's Urban Search and Rescue Response System *Field Operations Guide*.

**Pre-Departure:**

- Contact the operations coordinator and receive general briefing. In addition to the general checklist, discuss:
  - Type and quantity of communication equipment for SAR operations.
  - Construction techniques used in affected country.
- Contact SAR personnel. Brief and ensure preparedness. SAR teams should be self-contained and able to function for 72 hours without resupply.
- Coordinate the acquisition and shipping of equipment. Ensure engines are purged and air bottles bled. Specify weight, cubes, and number of pieces and arrange for special handling requirements, including refrigeration and handling of gasses.

**In Country:****Immediate Actions:**

- If plan requires immediate SAR response, assist in selecting work site, set up equipment, organize SAR teams, and begin operation.
- Develop staff work schedule for task force, considering the need for 24-hour operation.
- With press officer and operations coordinator, establish on-site media management protocol. Brief unit leaders.
- If operational plan does not require immediate tactical response, offer technical assistance to existing search and rescue operations.

**Ongoing Actions:**

- Coordinate closely with technical/scientific operations specialists.
- Ensure proper safety practices and standards are observed. Immediately shut down any life-threatening SAR activity.

**Demobilization:**

See general checklist.

**C. Technical/Scientific Operations Specialists**

Provide DART with technical and scientific expertise pertaining to the disaster. Specialists assigned to the team may be from several different fields including shelter/housing, volcanology, geology, structural engineering, fire suppression, or hazmat. These specialists should not be confused with specialists specifically assigned to the DART planning function to provide assessments in technical and scientific areas (see DART planning).

When assigned to the operations function, these individuals are expected to perform operational activities such as working with the affected country and other organizations in teaching the proper use of USG-supplied relief commodities, taking measurements and samples, monitoring geologic activities, and providing technical advice in fire suppression and hazmat handling. Report directly to the operations coordinator.

**Pre-Departure:**

- Contact the operations coordinator and receive general briefing. In addition to the general checklist, discuss:
  - In-country support needs.
  - Current technical resources and relief commodities requested of USG by affected country. Obtain list.
  - Affected country technical/scientific capabilities to use resources and commodities.
  - Status of OFDA stockpile items and stockpile usage procedures.
  - Availability of in-country support services
  - Contact list for technical/scientific government officials and organizations in affected country.
- Coordinate the acquisition and shipping of equipment.
- Consider the need for specialized equipment or adaptors for affected country.
- Specify weight, cubes, and number of pieces and arrange for special customs clearance requirements.

## **In Country:**

### **Immediate Actions:**

- Establish contacts with USAID/Embassy and local counterpart experts. Share information on disaster and predicted technological occurrences.
- Assess affected country and other response organizations' abilities to use technical/scientific resources and commodities provided by USG and where resources and commodities would be best used.
- If emergency shelter is required, work with the logistics function to:
  - Perform thorough damage and needs assessment of shelter situation.
  - Move plastic sheeting as close as possible to area of victims' needs.
  - Establish location for distribution such as a large gym or soccer field. Ensure security and prevent distribution to inappropriate recipients.
  - Establish system of tracking and accounting with local officials or PVO's/NGO's/IO's.
  - Conduct training on best use of plastic sheeting. Distribute instructions. Provide assistance.
  - Coordinate closely with local housing authorities and USAID/Embassy specialists on local shelter situation.

### **Ongoing Actions:**

- Ensure the acquisition and shipping of appropriate technical/scientific equipment and relief supplies, including such items as OFDA plastic sheeting and seismic monitoring devices. Specify weight, cubes, and number of pieces and arrange for special handling requirements as needed.
- Advise operations coordinator of technological or scientific problems.
- Coordinate with safety officer (if on DART) on medical evacuation plan and on health and safety issues for DART members
- Offer assistance to existing technical and scientific operations

### **Demobilization:**

See general checklist.

## Planning Coordinator

Manages DART planning, assessing, reporting, personnel tracking, information analysis, and documentation activities. Makes recommendations based on analysis of information. Reports directly to the team leader. Serves as the acting team leader during his/her absence.

### Pre-Departure:

- Contact the team leader and receive a general briefing. In addition to the general checklist, discuss:
  - Reporting guidelines, procedures, formats, and time frames for DART cables, situation reports, and final disaster reports.
  - Points of contact for reporting information to USAID/Embassy, OFDA Washington, U.N., and affected country.
  - Types and frequency of assessments required by objectives.
  - Types (if any) of USG-funded grants and/or contracts in place in affected country at present.
  - Level of monitoring/assessment of present grants and/or contracts to be performed by DART.
  - Level of review expected for new proposals for relief activities.
- Discuss with OFDA Washington information specialist responsible for the disaster, guidelines, procedures, formats, and time frames for information reporting.
- Ensure the acquisition and shipping of special supplies for planning function.
- Ensure that adequate telecommunications equipment is ordered, considering requirements for conducting assessments, tracking resources, updating current events, and conveying information back to Washington.
- With team leader and OFDA staff, conduct initial DART briefing. Cover all items under "IN TRAVEL" in checklists as well as security briefing, travel advisory alert, public health bulletin, and list of do's and don'ts.
- Ensure planning staff obtains copies of USG-funded relief activity grants and/or contracts that DART will be monitoring in the affected country.
- Obtain a copy of OFDA's guidelines for grant proposals
- Ensure adequate maps of the affected country and mapping supplies are obtained.

## **In Country:**

### **Immediate Actions:**

- Locate affected country emergency management organization and/or on-site operations coordination center, report the DART's capabilities, requirements, and objectives and receive work area assignments (if the DART has an operational component).
- Set up an initial team briefing. Set time, place, and list of attendees for future planning meetings
- Supervise the formulation of an initial team operational plan based on immediate evaluations from all functions.
- Establish a DART headquarters and begin operation.
- Oversee the damage and needs assessment process and the development of a map of the affected area showing location of DART activities and of grants/contracts activities.
- At the DART headquarters, oversee the set up of information displays including organization charts, resource tracking systems, maps, chronology of major events and team activities, and situation reports
- Develop staff work schedule for function.
- Establish an operational plan development process with contributions from DART members. Decide if the plan will be given verbally or in writing to DART members. The plan should include.
  - Operational strategy and objectives (team leader and planning coordinator).
  - Tactical actions (operations coordinator).
  - Work assignments (operations and planning coordinators).
  - Communications plan (communications officer).
  - Transportation plan (transportation officer).
  - Commodity distribution plan (logistics coordinator).
  - Work maps (information officer).
  - Medivac plan (safety officer)
  - Demobilization plan (planning coordinator).
- Determine daily DART briefing and debriefing procedure and time schedule. Inform team leader.
- With press officer, establish procedures for press visits to command post (access to visual displays, situation reports, resource status information).
- Establish liaisons with other NGO's/PVO's/IO's, assisting country teams, donor countries, and the affected country to share information related to the disaster

### **Ongoing Actions:**

- Conduct regular planning briefing and debriefing sessions.  
Ensure:
  - Appropriate DART members submit information on time.
  - Sessions are objective oriented.
  - Strategy and tactics are developed and understood.
  - Sessions are brief, conducted on time, and have proper attendance.
  - Information is well-documented.
  - Displays and maps are used for illustration and are available as needed.
- Ensure the satisfactory completion and reporting of assessments.
- Ensure the monitoring of USG-funded relief activities as required.
- Identify and request technical/scientific specialists as needed. Brief and supervise these specialists when deployed with the DART.
- Ensure DART members regularly submit updates on situation status, work progress, resource location, and significant events.
- Oversee the situation reporting and distribution process.
- Oversee proper documentation of all DART activities.
- Conduct daily critique of operational plan effectiveness, analyze information gathered by planning staff, and make recommendations to team leader.
  - Recommend alternative team objectives.
  - Recommend increase or decrease in resources/activities needed to complete team objectives as objectives change.
- Ensure collection of unit logs from team members.

### **Demobilization:**

- Supervise the development of the demobilization plan.
- Ensure all DART members have submitted necessary information for final disaster report.
- Submit draft of final disaster report to team leader for review.
- Complete final disaster report and present to team leader.
- Submit all reports, evaluation, unit logs, and personnel time records to team leader.

## **A. Information Officer**

Collects, analyzes, documents, and distributes information on DART activities. Prepares all situation reports, and assists with the preparation of cables, briefing papers, DART operational plan, maps, and final disaster report. Tracks DART resources. Coordinates information gathering and reporting activities with PVO's/NGO's/IO's, other donor countries, and affected country. Reports directly to the planning coordinator.

### **Pre-Departure:**

- Contact the planning coordinator and receive a general briefing. In addition to the general checklist, discuss:
  - Reporting guidelines, procedures, formats, and time frames for DART cables, situation reports, and final disaster reports.
  - Points of contact for reporting information to USAID/Embassy, OFDA Washington, U.N., and affected country.
  - Obtain a list of PVO's/NGO's/IO's, donor countries, and U.N. agencies, with names and numbers if possible, working on disaster relief in the affected country.
- Discuss with OFDA Washington information specialist responsible for the disaster, guidelines, procedures, formats, and time frames for preparing information.
- Identify, prepare, and arrange for shipping of special supplies for planning function.
- Obtain adequate maps of the affected area and mapping supplies.

### **In Country:**

#### **Immediate Actions:**

- Perform immediate initial evaluation of information unit needs. Coordinate with administrative function.
- Assist in the preparation of the initial operational plan.
- Set up and maintain a tracking system for DART members.
- Work with the logistics officer to set up and maintain a tracking system for USG commodities. Use information for situation report.
- Establish local contacts and liaison with USAID/Embassy.
- Prepare initial map of affected area.
- Establish clearance process for situation reports and cables with team leader.
- Develop distribution list for situation reports and operational plans.

**Ongoing Actions:**

- Prepare and get clearance for situation reports according to identified procedures.
- Debrief field assessment officer(s), project officer(s), and technical/scientific specialist(s).
- Prepare and distribute DART operational plans as needed (see planning coordinator section for element of the plan).
- Coordinate information gathering and sharing with other PVO's/NGO's/IO's, U.N. agencies, other donor countries, and the affected country. This includes attending coordination meetings.
- Take field trips and assist with assessments as necessary to collect on-site field information.
- Continually collect, verify, analyze, and update information on general disaster status, progress in relief activities, areas of concern, maps, displays, and personnel and resource status locations from DART members and other sources.
- Document, distribute, and file planning function information including, situation reports, maps, cables, operational plans, logs, and meeting notes
- Make recommendations on future DART actions.
- Provide press with access to displays and information at pre-arranged times.
- As requested, provide copies of documents for meetings and briefings.
- Individually record significant actions and events in unit log each day and file.
- Collect and file unit logs from all DART personnel for use in disaster chronology

**Demobilization:**

- Assist with preparation of final disaster report by collecting all reports, evaluations, unit log, and personnel time records from DART personnel and submit to planning coordinator.
- Ensure requested documentation is distributed to local USAID/Embassy prior to departure.
- Prepare planning function materials, supplies, and files for return shipment to United States Account for missing items

**B. Field Assessment Officer**

Conducts field assessments of damage, needs, and security of the affected areas as well as the effectiveness of relief activities conducted by the affected country, PVO's/NGO's/IO's, and other donor countries. Makes recommendations on areas of focus for USG relief efforts. Provides written assessment reports to information officer. Reports directly to the planning coordinator.

### **Pre-Departure:**

- Contact the planning coordinator and receive a general briefing. In addition to the general checklist, discuss:
  - Guidelines, procedures, formats, and time frames for field assessment reports.
  - Types and frequency of assessments required by objectives.
- Obtain a list of PVO's/NGO's/IO's, donor countries, and U.N. agencies, with names and numbers if possible, working on disaster relief in the affected country.
- Obtain maps of the affected area.

### **In Country:**

#### **Immediate Actions:**

- Obtain information on locations of relief activities being conducted by the groups mentioned above.
- Transpose the above information to a map.
- Share the above information with the information officer.
- Begin initial field assessment based on priorities in the initial operational plan.

#### **Ongoing Actions:**

- Continue field assessments as required.
- Continue to provide information officer with assessment information.
- Provide inputs to the operational plan.
- Attend briefings and debriefings as required.

### **Demobilization:**

See general checklist.

### **C. Project Officer**

Assesses effectiveness of USG-funded relief projects conducted by PVO's/NGO's/IO's. Coordinates with these groups and the planning staff to identify potential areas of focus for USG relief projects. Performs initial reviews of grant/contract proposals submitted to DART and/or OFDA Washington by these groups. Makes recommendations on improvements to the proposals. Makes recommendations on whether or not to fund projects. Reports directly to the planning coordinator.

### **Pre-Departure:**

- Contact the planning coordinator and receive a general briefing. In addition to the general checklist, discuss:
  - Types and frequency of monitoring/assessment of grant activities required.
  - Level of review expected for new proposals for relief projects.
- Obtain a copy of USG-funded relief activity grants and/or contracts in place in affected country.
- Obtain a list of the relief projects being funded by PVO's/ NGO's/IO's, donor countries, and U.N. agencies in the affected country. Try to get contact names and phone numbers if possible.
- Meet or contact OFDA Washington PVO coordinator to discuss PVO'S/NGO'S/IO'S and U.N. activities (occurring or expected) in affected country.
- Meet or contact OFDA Washington OS staff members dealing with PVO'S/NGO'S/IO'S and U.N. grant/contract proposals to receive a brief on OFDA grant/contract review process.
- Obtain a copy of OFDA's guidelines for grant proposals.
- Obtain maps of the affected area.

### **In Country:**

#### **Immediate Actions:**

- Establish liaisons with NGO's/PVO's/IO's and U.N. agencies presently performing USG-funded relief projects.
- Locate USG-funded relief grants/contracts projects.
- Transpose the above information to a map
- Share the above information with the information officer.

#### **On-going Actions:**

- Conduct field assessments of USG-funded projects as required
- Continue to provide information officer with relief activity assessment information.
- Continue to coordinate with the USG-funded groups.
- Recommend relief activity areas that need to be addressed.
- Solicit new project proposals for these areas.
- Review and recommend changes and/or action on new proposals.
- Provide inputs to the operational plan.
- Attend briefings and debriefings as required.

### **Demobilization:**

See general checklist.

## **D. Technical/Scientific Specialists**

Provides DART with technical and scientific expertise pertaining to specific areas of need caused by the disaster. Expertise is used to assess the disaster situation; identify disaster relief/rehabilitation needs; review in-place USG-funded projects; and with other DART members, make recommendations on the design of appropriate USG-funded interventions and programs

Specialists assigned to a DART may be from several different technical/scientific fields including: shelter/housing, water, sanitation, food, health, infrastructure (transportation and utilities), volcanology, geology, hydrology, and fire suppression. Examples of these specialists include: CDC doctors, WASH consultants, Food for Peace officers, RHUDO officers, electrical engineers, transportation experts, disaster consultants, and Forest Service fire suppression officers. These specialists should not be confused with technical/scientific specialists, assigned to the DART operations function who provide on-site technical/scientific support to DART operations and the affected country (see DART operations). Reports directly to the planning coordinator.

### **Pre-Departure:**

- Contact the planning coordinator and receive general briefing. In addition to the general checklist, discuss:
  - In-country support needs.
  - Current technical/scientific resources and relief commodities requested of USG by affected country. Obtain list.
  - Affected country technical/scientific capabilities to use resources and commodities.
  - Availability of in-country support services.
  - Contact list for technical/scientific government officials and organizations in affected country.
  - What other PVO's/NGO's/IO's and other donor countries are doing and their capabilities.
- Coordinate the acquisition and shipping of equipment.

### **In Country:**

#### **Immediate Actions:**

- Establish contacts with technical/scientific experts at USAID/Embassy, PVO's/NGO's/IO's, affected country, and other donor governments to assess status of relief activities to date and projected.
- Conduct assessment in areas not covered by above groups.

- Prepare report of general situation in area of expertise, based on information from above groups and personal assessment. Include recommendations for follow-on actions and an assessment of the ability of the affected country and groups mentioned above, to make use of technical/scientific resources and commodities proposed or provided by USG.

**Ongoing Actions:**

- Monitor actions of above groups for effectiveness of their response.
- Conduct further assessments and make further recommendations as necessary.
- Work closely with the field assessment officer and project officer to insure their inputs into DART recommendations

**Demobilization:**

See general checklist.

**Note:** The above position description is generalized for any technical/scientific specialist assigned to a DART planning function. This FOG does not contain position descriptions for every type of specialist that could be assigned to a DART. However, brief descriptions for some specialists assigned to DART's in the past are listed below.

**E. Water and Sanitation Specialists**

**In Country:**

- Perform immediate initial evaluation of water and sanitation situation: Discuss needs with local health and public works officials, USAID/Embassy, other response teams, and international organizations. Assess affected country public works department's ability to rehabilitate their systems.
- Conduct thorough survey of public water supply and waste management systems. Determine needs for immediate repairs and chart areas on map.
- Survey water distribution and sanitation system in temporary shelter areas.
- Identify areas of greatest need for corrective actions.
- Make recommendations on best method of USG response to address the situation. Include ways to coordinate USG efforts with the local government, NGO's/PVO's/IO's, and other donor government operations

## **F. Health Specialist**

### **In Country:**

- Perform immediate initial evaluation of health situation. Discuss needs with affected country health officials, USAID/Embassy, PVO's/NGO's/IO's, and other donor countries.
- Coordinate or establish a disease and nutritional surveillance system and collect data as necessary. Determine cause or source.
- Advise local health officials on findings and suggest control measures, including vector, food, and sanitation control and their effect on food and water sources .
- Evaluate ongoing sanitary or public health programs.
- Investigate unconfirmed reports of disease outbreaks and malnutrition.
- Coordinate continuously with the above groups.
- Make recommendations on best method of USG response to situation.

## **G. Food Specialist**

### **In Country:**

- Perform immediate initial evaluation of food security situation. Discuss with affected country officials, USAID/Embassy (Food for Peace Officer if present), PVO's/NGO's/IO's, and other donor countries. Collect information on:
  - Affected country normal food production rates.
  - Food production rates as a result of the disaster.
  - Food requirements (compare affected government estimates with other nongovernment estimates).
  - Amount of locally available food.
  - Amount of shortfall.
  - Amount of food in pipeline from all sources.
  - Food for Peace commodities potentially available, from where, and how long for delivery.
  - Normal food basket of affected population, with acceptable alternatives.
  - Food distribution system condition (from ports to victims) including ability of food distribution organizations.
  - Availability of transport to move food within the affected country or from a third country into the affected country
- Review food sector portions of proposals for their appropriateness to the disaster situation.
- Monitor food distribution, quantify losses if possible, and make recommendations for improvements

- Coordinate with Food for Peace officer (FFP) in country and/or FFP/W and provide recommendations on commodity transfers and administrative funding requirements.

## **Administrative/Contracts Officer**

Manages DART fiscal and administrative activities. Hires and manages local personnel. Procures supplies, services, and facilities for the DART. Negotiates and signs relief grants and contracts in the field when OFDA Washington gives that authority to the DART. Reports directly to the team leader.

### **Pre-Departure:**

- Contact the team leader and receive a general briefing. In addition to the general checklist, discuss:
  - Fiscal authorities and levels delegated to team leader by OFDA Washington and authorities that will be re-delegated to the administrative/contracts officer, such as authority to sign relief grants and contracts, and purchase orders.
  - The level of review desired for relief grants and contracts.
  - Fiscal reporting requirements and time frames for DART cables, situation reports, OFDA MIS, and final disaster reports.
  - Reporting relationships and points of contact with USAID/Embassy and OFDA Washington.
  - Awareness of USAID Financial Management Office of the deployment of the DART and its possible workload consequences.
  - Types (if any) of USG-funded relief grants and/or contracts in place in affected country at present.
  - Fiscal monitoring requirements for administrative/contracts function of relief grants and/or contracts.
  - Relationships with other DART members regarding relief grants and contracts, such as project officers and technical/scientific specialists.
  - Types and levels of administrative support to be provided by administrative/contracts function to DART.
  - Funding cable for team support—amount, status.
  - Warrant level for team leader and/or administrative/contracts officer.
  - Disaster funding by other USG agencies such as DOD, and how it is being administered.
  - DART member fiscal responsibilities and allowances such as per diem vs. purchase order for lodging, local travel, phone call policy, and limits on petty cash reimbursements.

- Ramifications for administrative/contracts function of the "Notwithstanding" clause of the FAA.
- Contact USAID/Embassy to discuss administrative/contracting and support issues. Obtain names and telephone numbers of EXO and controller or person responsible for receiving DART allocations.
- Obtain copies of AID Handbooks (or pertinent sections) 8 (Disaster Assistance), 9 (Title II, Food for Peace), 13 (Grants), 14 (Contracts), 19 (Accountability), 22 and 23 (Travel and Administrative Operations); OFDA guidelines for grant proposals; MIS procedures.
- Ensure the acquisition and proper shipment of computer equipment (hardware and software) and office supplies for the administrative/contracts function. If assigned by team leader, obtain team support list items.

### **In Country:**

#### **Immediate Actions:**

- Establish contacts with USAID/Embassy. Determine reporting relationships; ability to support the DART with personnel, office equipment, space, transportation, and procurement. Determine availability of local storage and work space, local hires, equipment, supplies, relief commodities, and transportation. Specifically discuss the following issues:
  - Setting up a petty cash account. Establish necessary record-keeping, replenishment time frames and levels, and local currency availability.
  - Methods of communication with USAID/Embassy (phone, fax, radios). What communications equipment/services will the DART have to supply/pay for and how?
  - Motor pool procedures.
  - Procurement procedures.
  - Check cashing policy for team members.
  - Travel office procedures.
  - Local hire procedures.
  - Potential FAAS or SEP budget issues.
  - Methods DART can use to reduce its effect on the USAID/Embassy.
- Select a work site, set up equipment, and begin operation.
- Develop staff work schedule for function.
- If necessary, prepare and execute contracts for the rental of buildings, vehicles, and equipment. Hire local personnel as needed.

### **Ongoing Actions:**

- Establish a precise accounting and tracking system to ensure that all fiscal and administrative support actions are monitored, accurately documented, and filed in a safe place.
- Provide team leader with regular reports on the amount of money spent and obligated by DART
- If appropriate and agreed to by USAID/Embassy, establish contacts at MFA to explain DART mission and needs, such as assistance with customs expediting and waivers.
- Contribute regularly to team planning process.
- Advise other functions on cost estimates for proposed actions
- Prepare DART support budgets as required. Provide for contingencies.
- Inform and oversee proper time-keeping procedures for all DART personnel.
- Ensure a complete transfer of knowledge of the operation of the administration/contracts function if replaced prior to the demobilization of the team. Plan enough time for the transition

### **Demobilization:**

- Ensure all rented facilities and equipment are inspected prior to turning over. Ensure the inspection is documented. Conduct the inspection with owners if possible.
- Ensure all contracts, purchase orders (personnel, equipment and facilities), and payments are closed and prepare documents for final billing.
- Ensure that requested documentation is distributed to local USAID/Embassy prior to departure.
- Ensure arrangements are made for the disposition of any remaining facilities, equipment, and supplies with USAID/Embassy.
- Ensure the preparation of the DART documentation package.
- Ensure equipment, files, and records are accounted for and prepared for return shipment to the United States.

### **A. Procurement Specialist**

Procures facilities, services, and supplies for DART. Establishes and administers DART vendor contracts. Reports directly to the administrative/contracts officer.

### **Pre-Departure:**

- Contact the administrative/contracts officer and receive a general briefing. In addition to the general checklist, discuss:

- Fiscal authorities delegated to administrative/contracts officer and re-delegated to procurement officer, such as authority to sign service contracts, set up purchase orders, and administer petty cash.
- Fiscal signing authorities on DART
- Fiscal reporting requirements and time frames for DART cables, situation reports, OFDA MIS, and final disaster reports.
- Reporting relationships and points of contact with USAID/Embassy and OFDA Washington.
- DART member fiscal responsibilities and allowances such as per diem vs. purchase order for lodging, local travel, phone call policy, and limits on petty cash reimbursements.
- Types and levels of administrative support to be provided by administrative/contracts function to DART.
- Funding cable for team support—amount, status.
- With administrative/contracts officer, contact USAID/Embassy to discuss administrative/contracting and support issues. Get names and numbers of EXO and controller or whomever will receive DART allocations
- Assist administrative/contracts officer in obtaining copies of AID Handbooks (or pertinent sections) 8, 9, 13, 14, 19, 22, and 23; OFDA guidelines for grant proposals, MIS procedures
- Ensure the acquisition and proper shipment of computer equipment (hardware and software) and office supplies for the administrative/contracts function. If assigned by team leader, obtain team support list items

### **In Country:**

#### **Immediate Actions:**

- With administrative/contracts officer, establish contacts with USAID/Embassy. Determine reporting relationships, availability of personnel support including administrative, equipment rental, storage and work space, local hire, procurement of supplies and commodities, and transportation. Specifically discuss the following issues:
  - Setting up a petty cash account. Establish necessary record-keeping, replenishment time frames and levels, local currency availability
  - Methods of communication with USAID/Embassy. Phone, fax, radios, and who supplies what, and who pays and how.
  - Motor pool procedures.
  - Check cashing policy for team members.

- Contract travel office procedures.
- Local hire procedures.
- USAID/Embassy local banking procedures.
- Select a work site, set up equipment, and begin operation
- If necessary, arrange for rental of buildings and equipment. Hire personnel as needed. Set up purchase orders with hotels. Prior to leasing or purchasing any facilities, vehicles, or equipment, inspect with owner. Document conditions.

### **Ongoing Actions:**

- Ensure that all procurement actions are accurately documented and information is filed in a safe, weatherproof area
- Regularly provide administrative coordinator with reports on amount of money spent and obligated for DART support.
- Monitor vendor contracts.
- Ensure proper safety and security practices and standards are observed.
- Establish fiscal tracking system for all DART support expenditures.
- Set up a record keeping and filing system.
- Coordinate the acquisition of supplies such as paper, pens, strapping tape, computer paper, notebooks, forms.
- Establish facility, vehicle, and equipment maintenance system.
- Establish and monitor procedures for the contract/procurement and tracking of services provided the DART.
- Contact American businesses and solicit assistance with labor, storage space, transportation, and interpreters.
- Points to consider when leasing or purchasing vehicles:
  - Country laws on liability, insurance, licensing, and leasing.
  - Cost analysis between leasing with a package (driver, insurance, license) vs. purchasing plus cost of driver, insurance, license.
  - Field use vs city use.
  - Accidents (must budget for).
  - Fleet size and capability mix.
  - Personal use policy.
  - Availability of taxis (factor here is ability to communicate with the drivers).
  - Maintenance
  - Disposal at the end of DART assignment.
- Points to consider when hiring locals for DART support.
  - Country laws on hiring. May include very high taxes on wages or add on charges

- Embassy procedures: hiring, firing, evaluation criteria and system, benefits, currency payment, citizenship, tribe, grade structure, seniority, and workmen's compensation.
- Legality of using a purchase order to hire a local employee.
- Forms of payment: Treasury check, dollars, local currency (local hires almost always want cash).
- Hiring PSC's has other issues such as scopes of work, job descriptions, liability, and efficiency reports.
- Advertising for employment.
- Testing potential employees.
- Points to consider when deciding on housing for DART members:
  - OE-funded vs. program-funded employees.
  - Hotel costs per day are high but provides convenience of maid service and possibly less logistical coordination for transportation of team members.
  - Hotels costs may be reduced with a purchase order for block of rooms.
  - Consider morale factor of long-term hotel living.
  - Renting apartments or houses is cheaper by the month but may require additional logistical support, such as maid service for short-terms TDYers or even for DART members working long hours, extended travel time for pick-ups and drop-offs, and availability of restaurants or stores (markets) to purchase food.
  - Apartments or houses may also require house cleaning contracts, maintenance contracts, and will have to be furnished.
- Points to consider leasing or purchasing equipment
  - Voltage and the need for generators, transformers, surge protectors, and/or power stabilizers.
  - Delivery time frames and cost vs time issues
  - Availability locally of parts and service.
  - Expected duration of DART deployment.

#### **Demobilization:**

- Conduct post-inspection of rented facilities and equipment. Document the inspection. Conduct the inspection with the owner if possible.
- Conclude all contracts, purchase orders (personnel, equipment and facilities), and payments and prepare documents for final billing.
- Prepare requested documentation and distribute to local USAID/Embassy prior to departure.

- Make arrangements for disposition of remaining facilities, equipment, and supplies with USAID/Embassy.
- Assist with preparation of the DART documentation package.
- Account for equipment, files, and records, and prepare them for return shipment to the United States.

## **B. Administrative Support Personnel**

Provides administrative support to all DART functions. Reports directly to the administrative/contracts officer for employment issues but may take daily direction from any function that he/she is assigned to. This position is usually filled by a local hire through USAID/Embassy network or directly from the affected community.

### **In Country:**

#### **Immediate Actions (upon being hired):**

- Perform immediate initial evaluation of administrative support needs. Consider the need for phones, radios, fax machines, typewriters, computers, electricity, work/storage space, and the ability to expand, if necessary. Identify needs to supervisor.
- Establish and monitor procedures for use of office equipment.

#### **Ongoing Actions (performed for various functions):**

- Assist with the development of an efficient record-keeping system tailored to the DART structure and space.
- Drive vehicles.
- Assume day-to-day responsibilities for processing purchase orders, petty cash transactions, payments for leases, payroll, time and attendance, and other financial responsibilities.
- Provide unofficial interpretive and translation services.
- As requested type, file, fax, and copy.
- Answer phones and radios and keep communications logs.
- Act as a receptionist.
- Take and write up meeting notes.
- Assist in briefings.
- Provide expediting services as required.
- Assist in preparing maps.
- Assist in maintaining tracking systems by gathering information and filling out forms.
- Give general advise on local issues such as laws, customs, government and private sector, and locations of supplies, equipment, and commodities.

**Demobilization:**

- Assist with preparation of DART documentation package
- Complete paperwork on time and attendance
- Receive an evaluation.
- Ensure equipment, files, and records are accounted for and prepared for return shipment to the United States.

# **Chapter IV**

## **Forms and Instructions**

## Forms and Instructions

This chapter contains sample forms and instructions for use during disaster assessments and response. The forms can be used to document assessments, communications, individual activities and team progress; request, manifest, and track resources and commodities; and account for commodities issued. These forms are offered as optional methods to perform required documentation, tracking, and accounting. Their use is not required in that DART members may already have in place, other forms and methods to perform the same functions. The forms can be obtained through OFDA's Operations Support Division.

### Transportation Tracking Form

#### Instructions

The **Transportation Tracking Form** is a method to track the movement by aircraft, vehicle, or boat of resources to, from, and within a disaster. This form will help the DART or responsible individuals know the status of inroute resources assigned and act as a safety check for personnel who are traveling, by tracking departures and arrivals against schedules.

- Block 1 **Disaster Name**—Enter the name given to the disaster by OFDA (Ex. Hurricane Hugo, Armenia Earthquake).
- Block 2 **Vehicle/Aircraft Type**—Enter the type of transport (Ex. 2-1/2 ton truck, C-130, boat).
- Block 3 **Vehicle/Aircraft ID**—Enter the identification number or letters for the vehicle or aircraft. (Ex. United Airlines Flight #123, DOD N3456 with **Mission Number** if known).
- Block 4 **Passengers/Cargo**—Enter the total number of passengers (pax) and the weight of the cargo for each portion of movement (Ex. 5 pax/1,000#). For the names of the passengers and description of the cargo see the Transportation Manifest Form.
- Block 5 **Date**—Enter the date of travel (Ex. 1/2/90).
- Block 6 **From**—Enter the place of departure.
- Block 7 **To**—Enter the destination point

**Block 8 Transit Time**—Enter the estimated time of departure (ETD), the actual time of departure (ATD); the estimated time of arrival (ETA), and the actual time of arrival (ATA). Put all times in local times.

**Block 9 Remarks:**—Enter any remarks that you feel are pertinent

**Note:** For specific listing of cargo/passengers, see request numbers on the Transportation Manifest and Resource Request Forms.



# Transportation Manifest Form

## Instructions

The **Transportation Manifest Form** is a method to document what resources (personnel, equipment, commodities, and supplies) are transported to, from, or within a disaster. This form should be filled out by the sending unit or the chief of party at the point of departure. It is a three-part form. Part 1 is to be left at the point of departure. Part 2 is for the receiving organization or responsible individual at the destination point. Part 3 is for the chief of party's records. If possible, once the form has been filled out, make copies of it as they are useful lists which for those who need to know the names of travelling individuals at intermediate stops and various check-in locations at the destination point

- Block 1 Disaster Name**—Enter the name given to the disaster by OFDA (Ex Hurricane Hugo, Armenia Earthquake)
- Block 2 Page \_\_\_ of \_\_\_**—Enter the page number and the total number of pages used manifesting the resources.
- Block 3 Vehicle/Aircraft ID**—Enter the identification number or letters for the vehicle or aircraft. (Ex. United Airlines Flight #123, DOD C-130 N3456 with Mission Number if known)
- Block 4 Chief of Party**—Enter the name (if personnel are traveling) of the individual who is the point of contact for those travelling as a group.
- Block 5 Report To**—Enter the name of the person who is the point of contact or consignee at the destination. Be sure to include the phone number or radio frequency. (Ex. Paul Bell 234-4567 or 127.45 VHF).
- Block 6 If Delayed, Contact:**—Enter the name of the person who is the point of contact if transportation is delayed or rerouted. Be sure to include the phone number or radio frequency.
- Block 7 Place of Departure**—Enter the name of the location from which the transportation is originating. Include the estimated time of departure (ETD) and the actual time of departure (ATD). All times should be listed in local times

- Block 8 Intermediate Stops**—List any intermediate stops with points of contact and estimated times of arrival and departure at those stops. Use the **Remarks** area if you need more room (Ex. ETA 1/3/90 0345 Honolulu, HI, ETD 1/3/90 0600, Jim Smith 818-234-6789).
- Block 9 Destination**—Enter the final destination, the estimated time of arrival, and upon arrival the actual time of arrival. Again all times should be local (Ex. ETA 1/4/90 1200 Tonga Int'l ATA 1/4/90 1345).
- Block 10 Request Number**—Enter, if known, the **Request Number**, from the **Resource Request Form**, for the item or person that is being transported. This will help reference back to the **Resource Request Number** that originated the request for the resources (Ex. 6/29-1).
- Block 11 Resource Description and/or Pax Name**—Enter the resource description or name of the passenger (pax). Put the dressed weight of the passenger after his/her name (Ex. Blankets, water purification unit; Pete Bradford -195). You may also want to put in an abbreviation of the pax's home organization.
- Block 12 Cargo/Bag. Wt.**—Enter the weight of the cargo or passenger's bag(s). This is very important when manifesting for small aircraft.
- Block 13 Cube/Dim.**—Enter the total cubic feet of each item and the dimensions of the largest piece of cargo being transported. This includes the bags and equipment of each person manifested. This will help when setting up transportation to meet specific requirements such as large cargo doors or appropriate sized truck to pick up resources.
- Block 14 Remarks**—Enter any remarks as needed, such as intermediate stops not listed in number 8 or possible changes in carriers.
- Block 15 Print Name, Sign, and Date**—The person preparing the manifest should print their name, sign, and date this form.



## Resource Request Form

### Instructions

The **Resource Request Form** is used by the logistics function of a DART to track and document resources requested by the DART to support a disaster. It may also be used to keep an inventory of resources on hand as the resources are issued. These resources can include supplies, commodities, personnel, aircraft, and services

**Block 1 Disaster Name**—Enter the name given to the disaster by OFDA (Ex. Hurricane Hugo, Armenia Earthquake).

**Block 2 Page**—Sequentially number the pages used.

**Block 3 Date/Request Number**—Enter a Date/Request Number for each item requested. Start each day with the number 01 and continue consecutively (Ex. 6/29-1, 6/29-2, 6/30-1, 6/30-2). This number will be a specific number that identifies the resources that are requested/received

**Block 4 From/To**—Enter the initials and an abbreviation for the location of the person who is requesting and of the person receiving the request for the resources

**Block 5 M**—Enter the method the request for the resources were transmitted (Ex. P = phone, C = Cable, F = fax machine, R = radio).

**Block 6 Resource Description**—Enter a description of the items that are requested. Use standard OFDA descriptions of items whenever possible (Ex. blankets, wool; water containers, 5-gallon). Be as descriptive as is required to make sure the request is clear (Ex. Radio Tech., with expertise in HF Radios)

**Block 7 Quantity Requested**—Enter the quantity requested.

**Block 8 Unit of Issue**—Enter the unit of issue (Ex. ea = each, bx = box, bbl = barrel, cs = case).

- Block 9 Quantity Received**—Use this block to identify how much of the requested resources have been received, as they arrive. Use a pencil as this quantity will change if the requested amounts come on several deliveries. **Be sure to cable OFDA-Washington upon the receipt of requested items.**
- Block 10 Quantity Issued**—Use this block to identify how much of the requested resources have been issued. Again use a pencil as this quantity will change as resources are issued out. Maintaining an accurate number of quantities received and issued will provide an inventory of quantities on hand.
- Block 11 Remarks**—Use as needed to clarify information.

## Resource Request

Disaster Name \_\_\_\_\_ Pg \_\_\_\_\_ 1 \_\_\_\_\_ 2

Date/ Request #	3 From 4 To	5 M	6 Resource Description	7 Qty Req	8 Unit Issue	9 Qty Rec'd	10 Qty Issued	11 Remarks
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IV-9

FOG Version 2.0

# Commodity Issue Form

## Instructions

The **Commodity Issue Form** is to be used when commodities are issued by the DART or by the USAID/Embassy to the affected country, or PVO's/NGO's/IO's for distribution. For complete tracking of commodities the host country should also fill out this form or similar documentation when it reissues these commodities to the next level in the commodities distribution system. It is the responsibility of the USAID/Embassy or the DART to retrieve a signed copy of this form from the host country, or PVO's/NGO's/IO's upon completion of the distribution of the commodities. This form is required to document the movement of commodities and to balance the inventory of those commodities. This form should be filed with the final disaster documentation package. This form can also be used to hand receipt returnable items to individuals, such as radios.

The Commodity Issue Form has three parts. The first part remains with the issuing point. The second and third parts are taken by the transporter, with the commodities. Upon receiving the commodities, the recipient or consignee signs the form and retains part two. The recipient or consignee of the commodities sends the third part back to the issuer to complete the accounting cycle. The bottom of the form will indicate who should retain which part.

- Block 1 **Disaster Name**—Enter the name given to the disaster by OFDA (Ex. Hurricane Hugo, Armenia Earthquake).
- Block 2 **Page \_\_\_ of \_\_\_**—Enter the page number and the total pages used of this form each time commodities are issued.
- Block 3 **Date**—Enter the day and month of the transaction, excluding year (Ex. 4/21).
- Block 4 **Method of Transportation**—Enter how the items were transferred from issue point to delivery point (Ex. Truck #123, DOD C-130, Aircraft N3456).
- Block 5 **From**—Enter the agency and location from which the commodities are being sent (Ex. OFDA, USA).

- Block 6 **To**—Enter the agency and location to which the items are being issued (Ex. UNDHA, Yerevan, Armenia)
- Block 7 **No.**—Sequentially number the commodities you are issuing.
- Block 8 **Commodity Description**—Enter a description of the commodity that is being issued (Ex. Blankets, wool; water containers, 5-gallon; water, wheat, rice) If the form is being used as a hand receipt, be sure to include serial numbers or other identifiers (Ex. Chainsaw S/N 23456, Radio MX-360 P/N 35678).
- Block 9 **Quantity Issued**—Enter the amount of each commodity being issued.
- Block 10 **Unit of Issue**—Enter the unit of issue (Ex. box, bundle, carton, case), or unit of measure (Ex. liters, gallons, pounds, kilos, metric tons).
- Block 11 **Issued By**—Enter the printed name, signature, and title of issuing party and date
- Block 12 **Transported By**—Enter the printed name and signature of transporting party and date. By signing, the transporter acknowledges that the items listed above have been received for transportation
- Block 13 **Received By:**—Enter the printed name, signature, and title of receiving party and date. By signing, the recipient acknowledges that the items listed above, unless otherwise noted, have been received.
- Block 14 **Remarks**—Identify items listed above that have not been received or have been received in a damaged condition. Also, identify in this box if the recipient in Block 13 is a country, a PVO/NGO/IO, an individual, or an institution such as a hospital or a school and if the recipient is delivering relief supplies directly to victims. If the recipient is delivering directly to victims, estimate the number of victims who will receive assistance.

## Commodity Issue

Disaster Name		1	Pg _____ of _____		2
Date		3	Method of Transportation		4
From Agency Location		5	To Agency Location		6
7	8	9	10		
No.	Commodity Description	Qty	Unit Issue		
Issued By (Print Name)					11
Signature					
Title					
Date					
Transported by (Print Name)					12
Signature					
Title					
Date					
Received by (Print Name)					13
Signature					
Title					
Date					
Remarks					14

# T-CARD

## Instructions

T-Cards have a variety of uses. They can be used to track or to maintain status on people, equipment, and/or commodities. With the different colored T-Cards and the T-Card holder, they can provide a visual display that can organize information in a variety of ways and be quickly referenced. The T-Cards are easily transportable with the T-Card holder. How and if you use T-Cards will be dependent on the need and other possible tracking and status equipment you have, but T-Cards provide a simple system for organizing information at a disaster.

### Sample:

Header Smith, Peter - Metro Dade  
Assignment(s): Operations Coordinator  
Date of Arrival 6/18  
Date of Departure: 6/30

### Sample:

Header: Plastic Sheeting  
Date(s) and Amounts Ordered: 3/24 500 rolls  
3/30 250 rolls  
Date(s) Arrived 3/26 225 via C-141 from Italy  
3/27 225 via C-141 from Italy  
3/29 50 via C-130 from Italy  
4/2 250 via C-5 from Italy  
Date(s) Distributed and Consignee:  
3/26 175 rolls to Red Cross, Smith  
3/26 50 rolls to School Superintendent, Brady  
3/28 125 rolls to St Johns Mayor, Byrd

### Sample:

Header: King Radio - S/N 384258  
Date Arrived: 6/21  
Assigned To:  
John Carroll-DART, 6/21  
Samual Smith-Jamaica RC, 6/23  
John Carroll-DART, 6/29  
Released To:  
OFDA by John Carroll, 7/12

## T- CARDS

Smith, Peter - Metro-Dade Fire

Position - Operations Coordinator

Deployed - 6/29 to Kingston

Deployed - 6/30 to Paradise

Departed - 7/15

KING RADIO - S/N 384258

Arrived - 6/21

Assigned to: John Carroll 6/21

Sam Smith - Jamaica RC 6/23

Chief Warden - Kingston FD 6/27

John Carroll (DART) 6/29

Released to OFDA by  
John Carroll - 7/1

## **Field Situation Reporting Format (SITREP)**

This sample format is designed to identify basic information needed by the DART plans function for planning and documentation purposes and by OFDA Washington for use in assisting and supporting the DART and for assembling the OFDA Situation Report. Each disaster will dictate other information to be included in the field sitrep. Items to include are:

1. DART field location, including city and country  
Sitrep #.  
Date.
2. Disaster Data:
  - # Affected
  - # Dead
  - # Injured
  - Death Rate
  - # Moderately and severely malnourished
  - Availability of food and water
  - Epidemics
  - # Vaccinated
  - # Homeless/displaced
  - Location of displaced camps
  - Extent of damage (buildings damaged and destroyed, area of flooding, amount of damage to roads and bridges, area of drought, areas of civil strife, etc.)
  - Status of transportation systems for emergency response
  - Short narrative on overall situation
3. Issues (political and others) arising or needing resolution and DART recommendations.
4. DART activities since last report (sample information to report):
  - # of DART members and their locations
  - Assessment activities by function
  - Accomplishments by function (persons assisted, meetings attended, commodities received from OFDA stockpile, or other shipments of USG donations, commodities distributed)
  - Estimated cost to date expended directly by DART
  - Coordination with other USG responders (USAID Mission, Embassy, DOD)

5. **Activities of others:**

- Affected country
- Other donor countries
- UN
- PVO/NGO/IO

6 **Actions requested of Washington:**

- Requests for personnel, equipment, supplies for DART
- Requests for relief commodities
- Status of previous requests (reference sitrep#)
- Requests for information
- Answers to or status of issues raised previously (reference sitrep#)

## Unit Log

### Instructions

A Unit Log should be used by all DART members to document important activities that occur during their assignment, such as work progress, meetings attended, people and organizations contacted, and personal movements. This Unit Log Form is offered as an example of a form to document activities. The important point is to make sure that you do have written documentation of your activities. Check with your DART supervisor to see how often you should turn in written documentation to the planning function. You may want to make a copy of your documentation for trip reports and also for travel voucher documentation purposes.

The Unit Log is self-explanatory.



## Communications Log

### Instructions

The Communications Log can be used to document information transmitted over phones, radios, or person to person, or as a DART Unit Log.

**Disaster Name:** Put in the name for the disaster (Example: Hurricane Hugo, Armenian Earthquake).

**Pg\_\_\_of\_\_\_:** Numbering the pages of the log keeps information in sequential order.

**Date/Time:** Chronologically enter information for better referencing at a later time.

### Station

**From/To:** Identifies who is calling whom. Clarifies context of the information sent or received

**Remarks:** Refers to main information sent or received during information exchange.

**Initials:** Identifies who received or sent the information in the remarks column. It provides a method to contact the person writing in the remarks column if more information or clarification is needed.



# **Chapter V**

## **Reference Information**

## Reference Information

This chapter contains reference information on DART communications systems, aircraft use and capabilities, OFDA stockpile commodities including detailed information on the use of plastic sheeting, dealing with personal health issues while deployed, and miscellaneous conversion tables.

### DART Communications

#### Requirements

The DART has the responsibility to communicate:

- within the DART organization and potentially at dispersed sites in the affected country.
- with the Embassy/Mission as required.
- with country officials as required.
- with OFDA Washington.
- with other relief organizations.

#### Systems

There are three main types of communications systems: satellite radio systems, high frequency radio systems, and VHF and UHF radio systems.

##### 1. Satellite Radio Systems

**Services:** Common telephone and TELEX services are available from land- and sea-based terminals using the International Maritime Satellite Consortium (INMARSAT) satellite network. These services include voice, facsimile (FAX), and data (computer-to-computer) communications. For practical purposes, any device that works with a common telephone jack works with this system.

**Operating Range:** Between 75 degrees north and south latitude anywhere in the world.

**Terrain Effects:** Local terrain has no effect as long as the radio antenna has a clear view of the sky in the direction of an available satellite.

**Weather Effects:** Heavy rain could impair the signal and high winds could affect dish antenna position.

**Frequency Selection:** The operation frequency is automatically assigned by the selected coast earth station and is not under the user's control. Foreign government frequency authorization is not required, regardless of the operating area

**Setup Time:** 10 to 15 minutes, depending upon the operator's level of expertise.

**Voltage Requirements:** 110 VAC 220 VAC or 12 VDC on newer models.

**Shipping and Handling:** Depends on INMARSAT system.

**Sources:** OFDA, Metro Dade Fire and Rescue, National Interagency Fire Center (NIFC), Pan-American Health Organization (PAHO), U.S. Coast Guard (USCG), DOD, OSIA, commercial vendors.

## **2. High Frequency Radio Systems (HF)**

**Services:** Voice communications and manually placed voice telephone calls can be made with this equipment.

**Operating Range:** HF radio can be operated anywhere in the world. It is useful for international and local communications (particularly up to about 500 km)

**Terrain Effects:** Local soil conditions affect antenna operation.

**Weather Effects:** None. However, solar weather and the earth's magnetic activity affect wave propagation and must be taken into account. Quality of communications is dependent upon severity of solar activity in combination with the quality of the allocated frequency band

**Frequency Selection:** Specific operating frequencies are determined by the communications officer in accordance with international agreements and host government law. Organizations such as MARS, USCG, AT&T, the U.N., or local NGO's/PVO's may have prior arrangements of which OFDA can take advantage. However, frequency allocation from foreign governments takes time and is not automatic.

**Setup Time:** 30 minutes to several hours depending upon antenna requirements and constraints, operator/installer training, and network complexity. HF is more complicated to coordinate, engineer, set up, and maintain than other systems.

**Shipping and Handling:** Each radio has its own case that fits under a commercial airliner seat and weighs about 40 pounds. A pouch with documentation and some spare parts is included in the case. Power from any 110 or 220 VAC or 12 VDC can be used

**Sources:** OFDA, OFDA-Costa Rica, U.S. Public Health Service, DOD, commercial vendors.

### **3. VHF and UHF Radio Systems**

**Services:** UHF/FM-type radios have voice capability. These radios can be adapted for data communications (including packet radio) by procuring additional equipment. VHF/AM type radios voice communications with world-standard aircraft radios.

#### **Operating Range:**

- Land communications are 1 to 3 km line-of-sight with no obstructions.
- Air communications are dependent on the altitude of the aircraft.
- In general, communications ranges can be extended by using different techniques including repeaters, appropriate types of antennas, and higher transmitter output power.

**Terrain Effects:** Range affected by local terrain and manmade objects. Rough terrain limits UHF more than VHF. However, radio wave propagation into small spaces (e.g., collapsed buildings) is significantly better at UHF than at VHF. Dense, wet foliage degrades UHF communications.

**Weather Effects:** None at VHF. Very heavy rain in the radio path degrades UHF communications.

**Frequency Selection:** Frequency selection is normally done in cooperation with the host government. Frequently allocation from foreign governments takes time and is not automatic.

**Setup Time:** About 2 minutes for the first radio. About 20 seconds for radios having identical programming.

**Shipping and Handling:** Depends upon the source.

**Sources:** OFDA, NIFC, Metro Dade, Fairfax County, commercial vendors.

## **Applications**

The type of system used will vary depending on the communications need.

Communications between the DART and OFDA Washington will most likely use INMARSAT radios. HF is the backup system via stations provided by Air Force MARS, USCG, AT&T, other maritime coast stations, or amateur radio.

Communications within the DART at one or more locations within the affected country will primarily use UHF/FM radio systems. For multiple sites within a country over large distances INMARSAT is preferred. For shorter distances, repeaters may be used. HF may be used for areas where repeaters are not possible.

Communications between DART members working at a local site will use UHF. Tactical communications will be through UHF. Command and logistical communications may be VHF or UHF depending upon local terrain and other conditions including availability of equipment. Nearly all ground-to-air communications will be VHF. However, HF may be used for long-range communications with aircraft.

Communications between the DART and PVO's/NGO's that are operationally involved will primarily use VHF/FM and UHF/FM radio systems. However, HF may be used for paths where repeaters are not practical and for coordination with agencies who normally use this medium.

Communications with the Embassy/Mission and the affected country will use any systems mentioned above depending on the proximity of the Embassy/Mission and host country officials to the disaster site.

## **Policy on the Use of Frequencies**

In all cases, the host government has both the authority and the responsibility to control the use of communications equipment within its borders. A reasonable attempt must be made by the DART to obtain authorization from the host government for the use of radio communications equipment. Authorizations may be requested through the Embassy or in person. Written authorizations are preferred, but may not be possible to obtain in time of disasters.

When attempts to secure frequency use authorizations are unsuccessful, special care must be exercised in frequency selection to prevent harmful interference with surviving radio operations.

Frequency selection by the DART is the responsibility of the communications officer, who will inform DART members through written or verbal instructions.

### **Radio Identification and Communications Procedures**

For systems incapable of international communications, radio identification generally will be by an individual's name or position title. The radio identification system will be set by the communications officer.

For systems capable of international communications, radio identification shall be assigned by the communications officer in accordance with international agreements and host government law.

The following communications procedures should be used. When using radios, start by saying the name or call sign of the station you are calling, then "This is....". Speak clearly, using plain language-NO CODES!- and end your transmission with "over" if a reply is expected, or "out" if NO reply is expected. Use standard phonetics as illustrated below for call signs, station identifications, and spelling words and names that are not easily understood.

#### **Phonetic Alphabet**

A - alpha	I - india	R - romeo
B - bravo	J - juliet	S - sierra
C - charlie	K - kilo	T - tango
D - delta	L - lima	U - uniform
E - echo	M - mike	V - victor
F - foxtrot	N - november	W - whiskey
G - gulf	O - oscar	X - x-ray
H - hotel	P - papa	Y - yankee
	Q - quebec	Z - zulu

## Aircraft Information

### General:

OFDA frequently uses aircraft to support disaster response activities. It may use either commercial aircraft or DOD aircraft.

OFDA must first check the availability of commercial air carriers to meet disaster response needs. If commercial aircraft are available, they are chartered by OFDA logistics, through AID's Office of Transportation. Often though, commercial air carriers do not have aircraft available to meet the short time frames required by OFDA. Only if commercial aircraft are not available may OFDA may request assistance from DOD. OFDA's initial point of contact is the Office of the Assistant Secretary of Defense for Humanitarian and Refugee Affairs. If this office approves the request, OFDA will work directly with the Joint Chiefs of Staff's (J-4), Logistics Readiness Center, to work out the details on needs, availability, time frames, and accountability.

Be advised that anytime DOD aircraft are used, OFDA must follow all DOD regulations on weights, cubes, manifesting, hazardous cargo, and take off and landings. If more information is needed on DOD regulations or restrictions, contact OFDA's logistics officer.

When loading and off-loading any type of aircraft, the pilot or the crew chief are in charge. They will make the final determination on a "go-no-go" for the flight, based on the load, the weather conditions, the runway conditions, and any conditions specific to the flight.

**Always think about SAFETY around aircraft!!** Follow the instructions of the pilot and/or crew chief.

### Points to Consider When Dealing with Aircraft:

1. Whenever possible, all materials to be airlifted should be stored in containers (e.g , suitcases, backpacks, metal and cardboard boxes) for rapid handling and for stacking onto pallets.
2. All individual containers must be small enough to fit through passenger doors of commercial aircraft in case cargo space is not available.

3. Personal gear should be well-packaged (e.g., pack or suitcase) with the owner's name clearly marked to allow for rapid customs processing.
4. Packages containing hazardous materials/chemicals must be well-marked and kept separate from all other cargo so they can be left behind if refused by the carrier.
5. Individual pieces of cargo should not weigh more than 200 pounds to allow for movement by two people. DART member personal luggage is the responsibility of each member.
6. The length of the flight will determine fuel requirements and thus, cargo capacities of the aircraft. The more fuel required, the less weight for cargo.
7. Crew duty day times are very important and must be followed. Aircraft at your disposal do not represent an unlimited resource. Find out the flight crew's duty times for your planning purposes.
  - Crew duty day refers to the maximum time that a flight crew can be engaged in standing by for a flight or actually flying in an aircraft (normally 15 hours combined).
  - Crew flight time refers to the maximum time a flight crew can spend physically flying/maintaining an aircraft. Sometimes certain pre-flight and post-flight aircraft activities are included in crew flight time duty. This should be verified with the flight crew in advance.

### **Aircraft Loading and Off-Loading Methods:**

Aircraft may be loaded in four ways:

1. **Bulk Loaded**—Cargo is loaded on the floor and held in place by nets, straps, or ropes.
2. **Palletized**—Cargo is pre-loaded onto pallets, held in place by nets, straps, or ropes and then loaded onto the aircraft.
3. **Containerized**—Cargo is pre-loaded into closed containers and then loaded onto the aircraft.
4. **External (helicopters only)**—Cargo is placed in a net or suspended from a line and picked up and moved by the helicopter.

**Bulk loading** may increase the usable cargo space on an aircraft; however, securing cargo in place may be more difficult. Bulk loading also slows loading and off-loading, sorting, distribution, and customs processing.

**Palletizing cargo** is the method most often used to move OFDA commodities. OFDA usually uses DOD (U S. Air Force) aircraft for short time frame disaster support and the preferred method by DOD of cargo packaging is using pallets and netting. Commercial aircraft can also use pallets

Military pallets, officially called **Dual Rail 463L Pallets** (nicknamed "cookie sheets") measures **88 by 108 inches**, are made of aluminum and weigh 356 pounds. The loaded pallets can range in weight from 2000 to 6000 pounds. These pallets are reusable and must be returned. Do not leave them! They are used on the C-5, C-141, C-130, and some commercial aircraft. For logistical planning purposes, when building pallets, limit the height of a stack to **96 inches** for these aircraft unless authorized to stack higher by the crew chief

The size of commercial pallets varies, but is most often **88 by 108 inches** and **88 by 125 inches**. They are used on the DC-8, B-727, DC-10, and B-747 and weigh over 300 pounds. These pallets are also reusable. Commercial Hercules also use a pallet that is 88 by 118 inches

It is possible to build up pallets on the aircraft, but it is more difficult and very time-consuming. Remember, flight crew duty time is ticking!

**Containerizing cargo** is a method used to load large commercial aircraft such as 747's and DC-10's. Cargo containers come in a great variety of shapes and sizes and their maximum loaded weights can range from less than 1000 pounds to 25,000 pounds. Each type is designed to be loaded and off-loaded with cargo in place using a mechanized loading system or a forklift. It is very difficult, time-consuming, and sometimes impossible to hand-load or unload containers once they are on the aircraft

If a forklift will be used to load or off-load containers or pallets, make sure that the forklift can carry the largest pallet; has tines long enough to counterbalance the weight, and that the highest point of the forklift is lower than that portion of the aircraft (wing, tail, or door in open position) where it must move to retrieve the container or pallet

### Points to consider when planning to receive aircraft cargo:

1. Ramp space for parking aircraft. If there is no ramp space and you will have to unload on the active runway, consider off-loading time and schedules of other aircraft arrivals.
2. Weight of loaded aircraft and ability of ramp to support parked aircraft.
3. Availability of trucks and laborers if aircraft will be manually off-loaded. Remember planes may arrive at all hours.
4. Availability and right size of forklift if aircraft will be off-loaded using a forklift. Think again about arrival times. If none is available, OFDA logistics may be able to get approval from DOD for the Air Force to bring one along on the arriving aircraft. This may reduce the amount of relief commodities.
5. Storage space near the ramp if the commodities will be stored close to the off-loading point. Consider whether the location of the storage area will cause security problems.

**External loading** of cargo is done with helicopters. Helicopters normally can lift and move more cargo externally (slinging) than internally. The external cargo is loaded into specially made nets that are connected to a cargo hook on the belly of the helicopter. Cargo may also be suspended on cables (leadlines). Make sure leadlines and nets are approved for slinging cargo.

Remember, pallets, containers, nets, and leadlines are reusable. They may also need to be returned quickly to their point of origin, to be used for loading more cargo. Always think in terms of "backhauling" cargo equipment when it is no longer needed.

The charts that follow list some types of fixed winged and rotary winged aircraft that have been or might be used by OFDA during disaster operations. It includes specifications for the different categories of aircraft. The purpose of this chart is to assist in planning for the movement of people and commodities. Note however that these figures represent **approximate aircraft specifications**. Figures for each aircraft will vary based on individual aircraft configurations and ratings, operating range, runway conditions, temperature, altitude, and wind speed and direction. Always check with local aviation authorities as to what type of aircraft can operate in and out of local airports. This chart does not include specifications for aircraft capable of spraying insecticides. These specifications are available from the OFDA logistics officer.

AIRCRAFT TYPE	FUEL TYPE	CRUISE KNOTS	RUNWAY LENGTH	CARGO WEIGHT	CARGO CU. FT.	DOOR H x W (In.)	PALLET SIZE	PALLET QTY.	CONTAINER TYPES
C-5	Jet	436	7,700	130,000	13,000	150x228	88x108	36	Open Pallet
C-141B	Jet	440	6,300	40,000	4,500	106x123	88x108	13	Open Pallet
C-130	Jet	280	2,700	25,000	2,000	109x23	88x108	5	Open Pallet
Antonov - 124	Jet	450	10,000	300,000	30,000	173x238	ALL		ALL
Beach 18	AvGas	135	1,800	2,500	285		N/A	N/A	N/A
Beach 99	Jet	225	1,750	5,000			N/A	N/A	N/A
B 377/C97	AvGas	220	5000	32,000		173x162			
B-707-320C	Jet	450	8000	80,000	6,000	89x134	88x108/125	13	ALL
B-727-100	Jet	495	7,000	35,000	8,100	89x134	88x125	9	A,A-2
B-727-200	Jet	495	8,300	55,000	8,100	120x134	88x125	30	A,A-2
B-747-100	Jet	490	9,400	223,000	20,750		88x125	29	A,A-2
B-747-200	Jet	490	10,700	229,000	22,175		88x125	37	ALL
Casa C-212	Jet	195	2,500	4,000					
Cessna 340A (Propjet)	Jet	195	2,500						
Cessna 414	Jet	200	2,400						
Cessna 421-C (Propjet)	Jet	185	2,400						
C-46	AvGas	150	3,000	12,000	3,300				

V-10

FOG Version 2.0

AIRCRAFT TYPE	FUEL TYPE	CRUISE KNOTS	RUNWAY LENGTH	CARGO WEIGHT	CARGO CU FT.	DOOR H x W (In.)	PALLET SIZE	PALLET QTY.	CONTAINER TYPES
DHC-6 Otter (Propjet)	Jet	160	1,900	3,500	506	50x56	N/A	N/A	N/A
F-28 (Propjet)	Jet	380	5,200	15,000	3,400				
Falcon 50	Jet	490							
F-27 (Propjet)	Jet	240	6,000	7,500	1,980				
L-188 Electra (Propjet)	Jet	310	6,000	32,000	3,700	78x140	88x108	8	ALL
L-55 Learjet	Jet	460	4,500						
L-100-10 Commercial Herc	Jet	275	4,300	25,000	4,500	108x120	88x108/118	6	Open Pallet
L-100-20 Commercial Herc	Jet	275	4,500	37,000	5,300	108x120	88x108/118	7	Open Pallet
L-100-30 Commercial Herc	Jet	280	4,300	40,000	6,057	108x120	88x108/118	8	Open Pallet
Skyvan	Jet	130	1,500	3,500	780	72x72	N/A	N/A	N/A
Westwind 1124	Jet	450	4,900	1,190					
Cessna 185	AvGas	130	1,400	900					
Cessna 206	AvGas	130	1,500	1,100					
Cessna 207	AvGas	130	1,900	1,200					
Caravan	Jet	170	1,900	2,500	340				
Turbo Porter	Jet	142	620	1,400	100				
Hello Courier	AvGas	130	610	1,200	140				

AIRCRAFT TYPE	FUEL TYPE	CRUISE KNOTS	RUNWAY LENGTH	CARGO WEIGHT	CARGO CU. FT.	DOOR H x W (In.)	PALLET SIZE	PALLET QTY.	CONTAINER TYPES
Dash 7	Jet	225	2,200	11,300	2,100				
Dash 8	Jet	250	2,700	8,500	1,400				
Ilyushan 76	Jet	430	2,800	75,000	8,300				
DC-8 51F	Jet	480	8,000	61,000					
DC-8 54F	Jet	480	8,000	95,800					
DC-8 55F	Jet	480	8,000	97,000					
DC-8 73F	Jet	480	8,000	102,000					
DC-8 61F	Jet	480	8,000	83,000					
DC-8 63F	Jet	480	8,000	94,000					
DC-8-70	Jet	480	8,000	85,000					
DC-9	Jet	450	7,000	35,000	4,500				

V-12

FOG Version 20

HELICOPTER TYPE	FUEL TYPE	CRUISE KNOTS	CARGO WGT. INT.	CARGO WGT. EXT	PAX
B-204	Jet	100	2,600	3,100	10
B-205	Jet	100	2,600	3,100	14
B-206B	Jet	110	760	910	4
B-206L	Jet	110	970	970	6
B-212	Jet	100	2,600	3,100	14
B-214	Jet	100	3,000	7,000	12
A-Star	Jet	125	1,100	1,400	5
Alloutte II SA 318C	Jet	95	900	1,300	4
Hughes 500C	Jet	125	700	900	4
Hughes 500	Jet	125	700	900	4
Alloutte III	Jet	110	1,400	1,600	6
Lama SA 315B	Jet	100	1,400	1,400	High alt
BV-107	Jet	125	7,000	9,000	Cargo
BV-234	Jet	130	22,500	22,500	44
Hiller FH 1100	Jet	105	700	900	4
Bell G-47	AvGas	75	800	1,000	2

## Overland Transport Capacities

Surface Carrier		Payload
Standard railway truck		30 MT (52 m <sup>3</sup> )
Standard container	20 ft/6.1 m	18 MT (30 m <sup>3</sup> )
	40 ft/12.2 m	26 MT (65 m <sup>3</sup> )
Large lorry and trailer		22 MT
Large articulated lorry		30 MT
Medium lorry		6-8 MT
Long wheel base landrover/ cruiser-type pickup		1 MT
Hand-drawn cart		300 kg
Camel		250 kg (more for short distances)
Donkey		100 kg
Bicycle		100 kg

## **OFDA Stockpile Commodities**

OFDA maintains stockpiles of standard relief commodities at five locations around the world. The purpose of these stockpiles is to position relief commodities closer to potential disaster sites to allow for more immediate availability of relief commodities for disaster victims. The prepositioning of these commodities also reduces the delivery costs.

Stockpiles are located in Maryland, Panama, Italy, Guam, and Thailand. The Panama, Guam, and Italy stockpiles are located on U.S. military installations, and the military by agreement assists with the handling and storage of these commodities. In Maryland and Thailand, the stockpiles are maintained through contracts with private organizations.

To access commodities in the stockpiles, the OFDA logistics officer notifies the stockpile managers of the type and amount of items needed for a disaster, and coordinates the pickup and delivery of the commodities to the disaster affected country. The types and amounts of commodities withdrawn from the stockpiles are based on the acceptance of needs assessments conveyed to OFDA from the affected country.

There is a chance that the initial stockpile commodities released to a disaster may precede the arrival of a DART. Upon arrival at a disaster site, DART members should be prepared to assist or take on the responsibility of receiving, inventorying, issuing, tracking, and accounting for these commodities. If at any time during a disaster the DART needs further stockpile commodities, a request with a description of the need must be processed through OFDA. A DART cannot access the stockpiles directly.

Stockpile commodities may be released to PVO's/NGO's who are qualified to distribute and instruct in the use of the commodities.

Information critical to the planning of all aspects of the ordering, movement, tracking, and accounting for OFDA stockpile commodities is provided below.

### **Stockpile Items and Specifications**

#### **OFDA Individual Support Kit:**

The purpose of this kit is to provide the necessary items to allow a relief worker to be able to support him/herself for 48–72 hours,

under adverse field conditions, if necessary. Many items are useful to an individual during a relief operation. It is a support kit, not a survival kit. It is not intended to compliment personal items that DART members bring on a deployment. Each kit measures 18 by 18 by 12 inches. It displaces 3 cubic feet and weighs 23 pounds. The cost is \$150/kit. All the items listed below are packed into the backpack.

**Contents:**

<b>Description</b>	<b>Quantity</b>	<b>Unit</b>
Backpack, nylon w/OFDA imprint	1	each
Bags, zip lock	6	each
Booklet, <i>Protect Your Hearing</i>	1	each
Candles	10	each
Cap, baseball adjustable orange	1	each
Collapsible cup, 3-ounces	2	each
Cooking stove, pocket size with fuel pellets	1	each
Cord, braided 1/4 inch by 50 feet	1	each
Dust mask 3M 8500	10	each
Ear plugs, molded silicone with cord and carry case	2	pair
Emergency blanket (mylar) 53 by 92 inches	2	each
Eye wash, with rinse cup	1	each
First aid kit	1	each
*Flashlight heavy duty with alkaline batteries	1	each
Food, MRE pack, 8 ounces each CK/BF/MB/Tuna	4	each
Food, survival bar, 3600 cal.	1	each
Gloves, work heavy leather/cotton	1	pair
Gloves, work lightweight cotton	1	pair
Hard hat, ANSI Z89.1-1986 ABC with logo and chin strap	1	each
Insect repellent, 3-ounces liquid	1	each
Knife, multi-blade camp	1	each
Matches, waterproof, boxed	4	each
Mirror, lightweight plexiglass	1	each
Mosquito head net with neck tie	1	each
Mug, tin, 10-ounce	1	each
Plastic tarp, reinforced poly 6 by 8 feet	1	pack
Poncho, orange 52 by 80 inches	1	each
Portable water jug (2-1/2 gal )	1	each
Respirator mask with two spare filters	1	each
Safety goggles CLRZ87 STD	1	each
Sealing tape, nylon reinforced	1	each
Shoe protect. PVC with elastic top	3	pair
Shovel, collapsible	1	each
Sierra cook cup, small, stainless steel	1	each
Tissues, box, travel size	1	each

Tools, slip joint pliers, 6-inch	1	each
Tools, screwdriver flathead	1	each
Tools, screwdriver Phillips #2	1	each
Trash bags, 30-gallon	4	each
Utensils three piece camp	1	each
Vest I.D. w/OFDA logo and reflective stripes	1	each
Water, drinking, 4-ounce foil package	6	each
Water, purification tablets small bottle (12 gal.)	1	each
Whistle, plastic with cord	1	each

\*NOTE: Batteries in flashlight are installed backwards. This is to eliminate the chance of battery drain. Batteries must be taken out and reinstalled putting positive (+) poles forward

### Intermediate Support Kit:

These kits are designed for distribution by SAR members of the DART to local national volunteers and others who will work for/with SAR members during rescue operations. Each kit contains enough material to equip 100 local laborers with limited safety items. Experience has shown that local volunteers are more reliable and effective when given simple tools and a form of team identification, such as the baseball cap.

These kits are packaged into wood crates of 4 by 4 feet by 40 inches. They displace 60 cubic feet and weigh 455 pounds each. Eight kits will fit on an Air Force 463L pallet. The cost is \$2200/kit.

### Contents:

Description	Quantity	Unit
Caps, baseball, orange	100	each
Cooler, drink insulated, 5 gal. w/logo	2	each
Dust mask, 3M 8500	500	each
Ear plugs, with case and cord	200	each
First aid kit 25-person	2	each
Flashlight w/heavy duty batteries	100	each
Gloves, heavy duty leather/cotton	100	pair
Hard hat, ANSI Z89.1-1986 ABC	100	each
Plastic tarp, reinforced polyethylene	2	packs
Rope, manila 1/2 by 50 feet	2	each
Safety goggles CLRZ87 STD.	100	each

NOTES: 1. Batteries in flashlights are installed backwards to eliminate the chance of battery drain. 2. Thirty-six pairs of gloves are packed inside the drink coolers.

### **Tents:**

OFDA stockpile tents are lightweight summer tents, designed for a family of six to eight people. Each tent is 10 by 14 feet with an external supporting tubular frame, a floor. Tent flies will be as a separate item upon request. The tent material is flame retardant. **Each tent is boxed and weighs 85 pounds. Approximate numbers per USAF aircraft are: 350 per C-130, 500 per C-141, and 1500 per C-5.**

### **Blankets, Wool:**

Wool blankets are used by disaster victims in cool climates. **Blankets are packaged in bundles of 25 each. The bundle weighs 85 pounds, measures 32 by 32 by 30 inches, and displaces 9 cubic feet. The cost per blanket is \$5.99.**

### **Blankets, Polyester:**

Polyester blankets are used by disaster victims in warm climates. **Blankets are packaged in bundles of 30 each. The bundle weighs 64 pounds and displaces 8 cubic feet. The cost per blanket is \$2.00.**

### **Chainsaw Kits: ;**

Chainsaws are used to cut up blown-down tree and brush debris usually resulting from a hurricane. The kits include safety chaps, goggles, gloves, an extra chain, a chain sharpener, oil, rags, and a saw tool. **Chainsaws can be deadly tools and should only be issued to individuals who can prove that they have previous experience operating and maintaining chainsaws. Chainsaws should not be used to cut up debris that has been submerged during a flood, because dirt and silt embedded in the debris will quickly dull the chain and make the saw useless. The kits weigh 54 pounds, measure 36 by 18 by 18 inches, and displaces 5.2 cubic feet. Each kit costs \$600.**

### **Hard Hats:**

Orange safety hard hats are provided for victims and relief workers when they are assisting in the removal of rubble from collapsed structures after an earthquake. **There are 20 per box, with dimensions of 18 by 18 by 24 inches. The boxes displace 4.2 cubic feet and weigh 17 pounds. The cost is \$3.47/hat, or \$69.40/box.**

### **Face Mask:**

Respiratory dust face masks are provided for victims and relief workers assisting in the removal of rubble from collapsed structures after an earthquake. These face masks are not fine enough to filter volcanic dust or toxic fumes. There are **600 per box with dimensions of 15 by 11 by 16 inches**. The boxes displace **1.4 cubic feet and weigh 9 pounds**. The cost is **\$.16/mask or \$160/box**. (Some newer boxes contain 600.)

### **Gloves:**

Leather palm work gloves are used by disaster survivors and relief workers assisting with relief efforts. There are **100 pairs per box, with dimensions of 12 by 17 by 26 inches**. The boxes displace **3.9 cubic feet and weigh 50 pounds**. The cost is **\$2.44/pair or \$244/box**.

### **Water Container, 5-Gallon Collapsible:**

Water containers are for use by disaster victims and relief workers for moving and storing potable water. There are **50 per box, with dimensions of 47-1/4 by 21-1/2 by 9-3/4 inches**. The boxes displace **5.73 cubic feet and weigh 38 pounds**. The cost is **\$1.50/container or \$75/box**.

Note: Some boxes in stockpiles may be from earlier contracts and contain fewer containers.

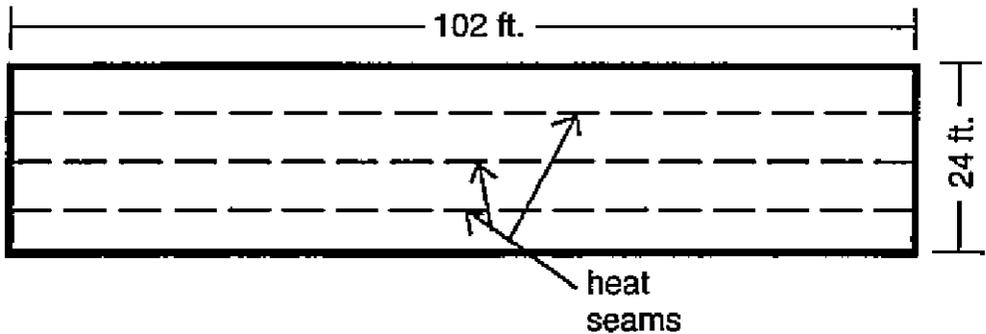
### **Water Tank, 3000-Gallon Collapsible:**

Water tanks are used by disaster victims to store large amounts of potable water. They have an open top with a cover. Once the tank is assembled, water tank access must be managed to prevent the polluting of the water in the tank. Each **3000 gallon tank has a collapsed size of 30 by 25 by 44-1/2 inches**. The tank displaces **18 cubic feet and weighs 125 pounds**. The cost per tank is **\$2400**.

## Plastic Sheeting

### General:

OFDA has developed and maintains a limited stock of this plastic at five worldwide locations (New Windsor, MD., Guam, Thailand, Panama, and Italy) This material is special designed for shelter and because of its high cost and unique qualities, it should be utilized only to meet temporary human shelter requirements. It can be used to replace damaged or destroyed roofing or to construct temporary shelter by those in need. This plastic sheeting should last over 1 year under normal field conditions and it functions extremely well in hot climates.



This plastic sheeting (24 by 102 feet) is boxed at one roll per carton weighing 130 lbs. Each heavy cardboard box is 42 by 24 by 16 inches. One roll is 2,448 square feet and has heat sealed seams 6 feet apart the length of the roll. These seams allow for quick separation since they will easily "zipper" apart. One box is 9.3 cubic feet and there are 10 boxes banded to a standard wood (42 by 48 inches) pallet. The weight of a 10-box pallet is 1360 pounds.

The plastic is coated on both sides of a black scrim net that makes it strong (cannot be torn) and non-transparent. The white side is ultra-violet deflective, treated to reduce the heat from the sun in hot climates. The other side is a light beige color and should be faced outward in colder climates. An 8-inch AID emblem is printed on the plastic at 3-foot intervals. It has "tic" marks down both sides at 5-foot intervals for measuring purposes. Also enclosed are six rolls of adhesive tape constructed from the same material as the plastic. Each roll of tape is 30 feet long and 1-3/4 inches wide.

Although the material is *fire-retardant*, open fires should not be allowed in or near the shelter for safety reasons.

One reported flaw is that like most tents moisture will condense (sweat) inside, when the tent is used in high altitudes or cold climates, since the material is nonporous and does not breathe. To remedy this, use a second layer of plastic over the structure, keeping it from touching the frame of the building.

### **Distribution**

The OFDA plastic was designed for distribution directly to disaster victims and for use on community buildings such as schools and hospitals, not for use on government or business buildings or churches, when they are not utilized as temporary mass shelter facilities.

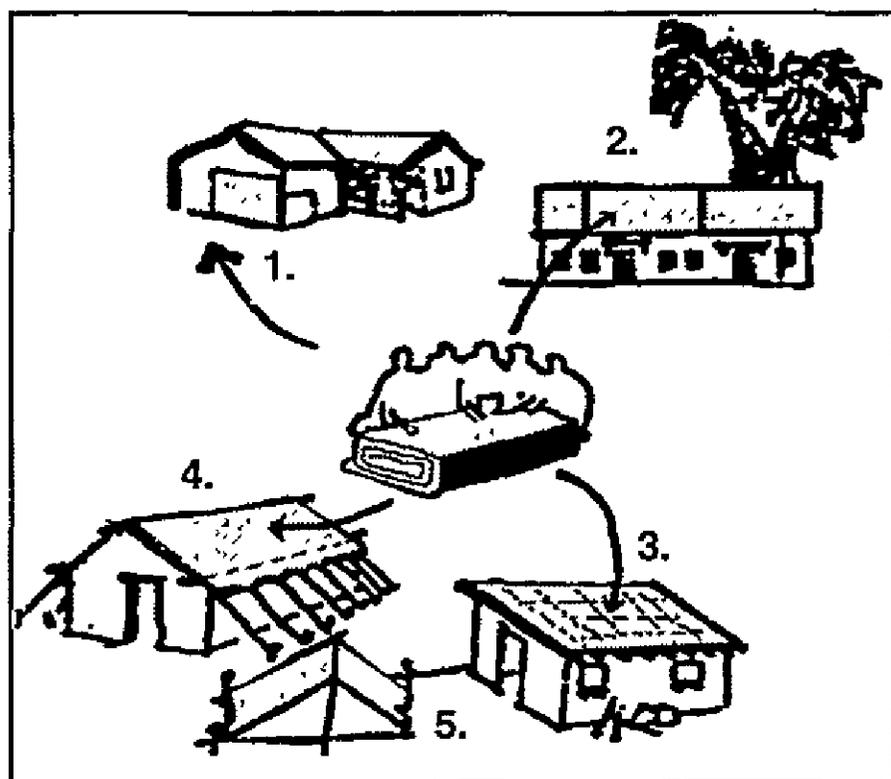
This sheeting cost averages (depends on volume purchased) \$282.00 per roll plus transport to the disaster and the transport to replace it to the losing stockpile. For public relations purposes, it should be advertised as furnished in square feet or square meters of unique shelter material rather than by the number of rolls. Example: one roll is 2,448 square feet or over 225 square meters, or 410 rolls is best advertised as over 1 million square feet.

Before unpacking and unrolling sheeting, move the distribution operation to a large area such as a school gym, football field, or airport hanger, preferably protected from the weather. For distribution purposes, the sheets can easily be separated at the heat seams by peeling the seams apart. Normally a single sheet is split at the center seam which allow strips of 12 by 102 feet. These are then cut at appropriate lengths for distribution. With measurement "tic" marks at every 5 feet, cutting lines can be quickly established. The most common size for a small family is a 12 by 20 feet piece. This may be enlarged according to family size, weather conditions, and other considerations such as roofing patches or replacements.

If wood shelter frames are constructed to be covered with the plastic, the walls should be slightly less than 6 feet high. This allows the plastic to be split quickly and easily by hand at the 6 foot seams. Walls slightly less than 6 feet high will allow all four sides of a structure to be wrapped with a single strip (see following design recommendation)

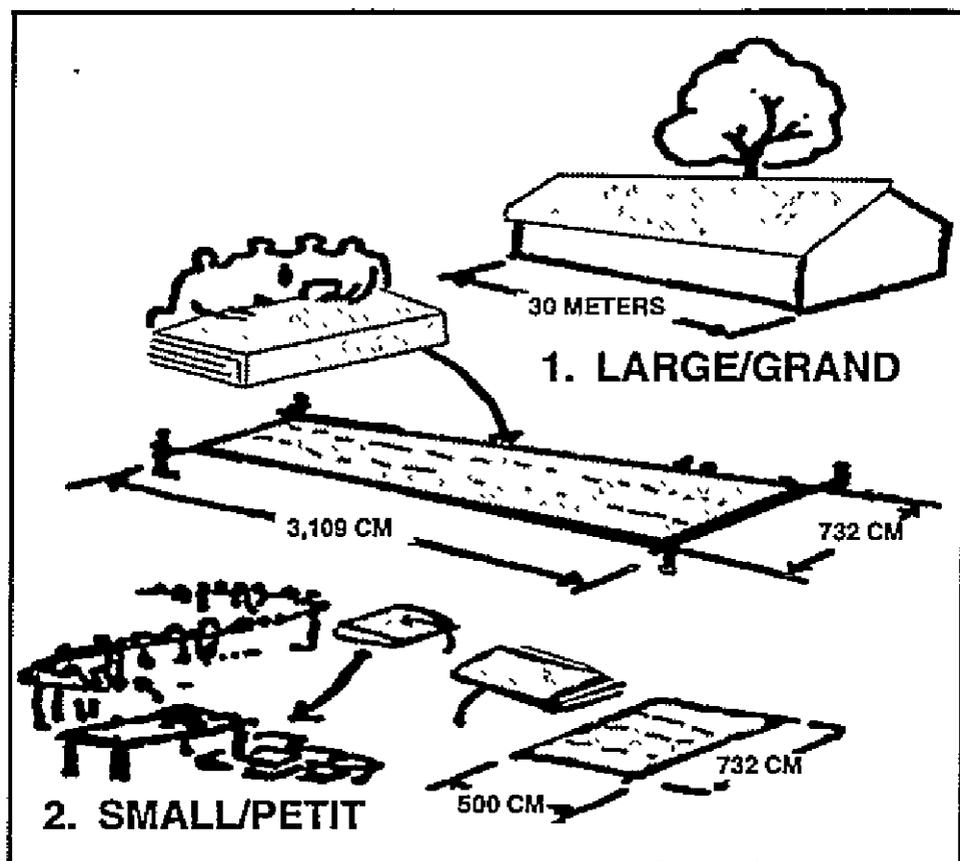
To wrap a structure, staple or nail one end of a 6-foot wide piece to the corner upright and pull or wrap it around the structure to the same beginning corner and staple or nail it to the same upright. Then go back and staple or nail at the other uprights and cross pieces. A door can be cut as a slit until the final door is established or designed. Nails should be hammered through thin wood or metal disks or strips, such as soft drink cans and lids, to prevent the nail head from pulling through. Staples, if available, work best since they cross over the scrim netting. Use the enclosed adhesive tape to seal seams, patch rips and cuts, and the seal nail and staple holes when used in the roof. The roof should be a single piece of plastic when possible to prevent the possibility of leaks in its center

## How to Use Plastic Sheeting



### General Uses:

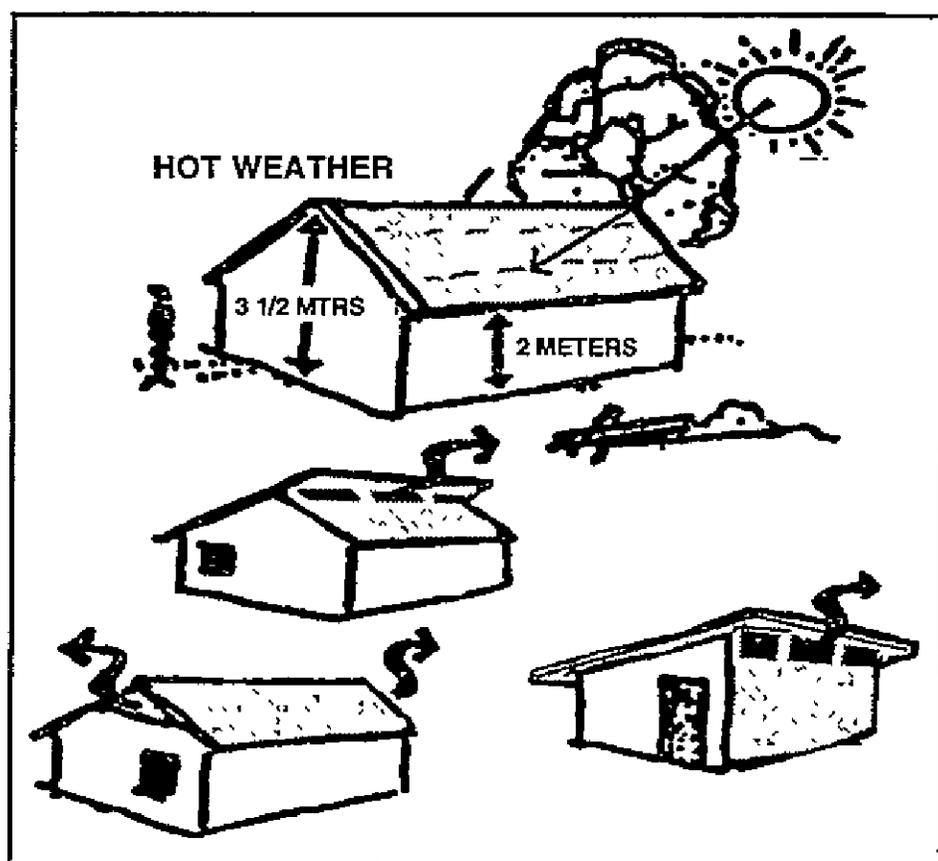
1. Repair a hole in a damaged wall.
2. Cover a hole in a damaged roof.
3. Cover a new roof built on an existing building.
4. Cover the walls and/or roof of a newly constructed building
5. Construct personal shelters.



### Dimensions:

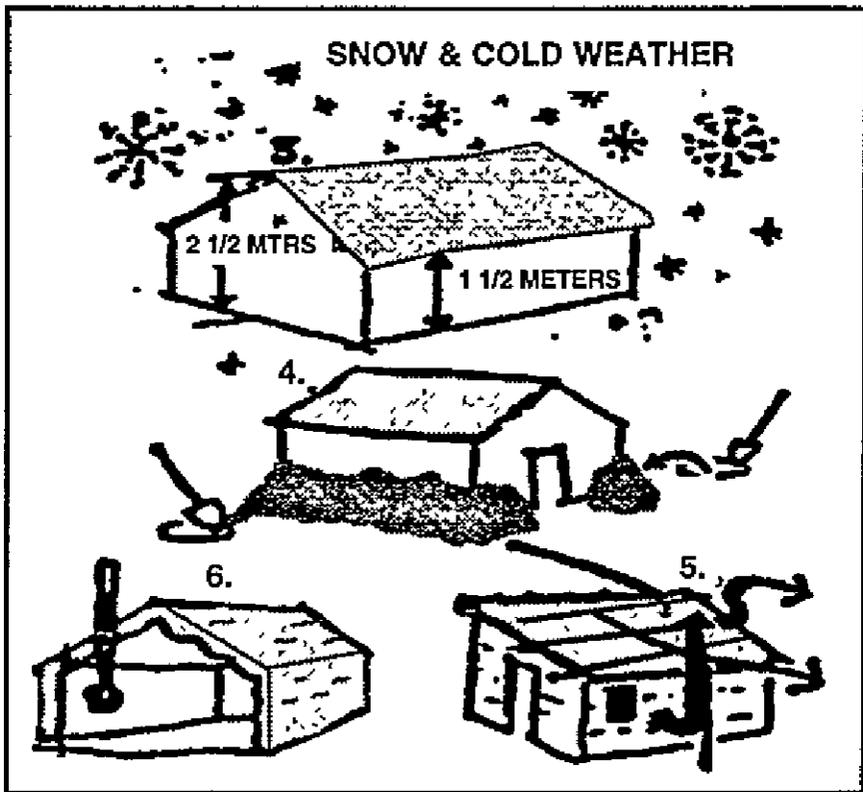
The package of plastic sheeting is very large: 732 cm wide by 3,109 cm long (24 by 102 feet).

1. The sheeting can be used to repair or build a large building such as a school, field hospital, or other community type building.
2. The sheeting can be divided into smaller pieces and distributed according to local needs and conditions.



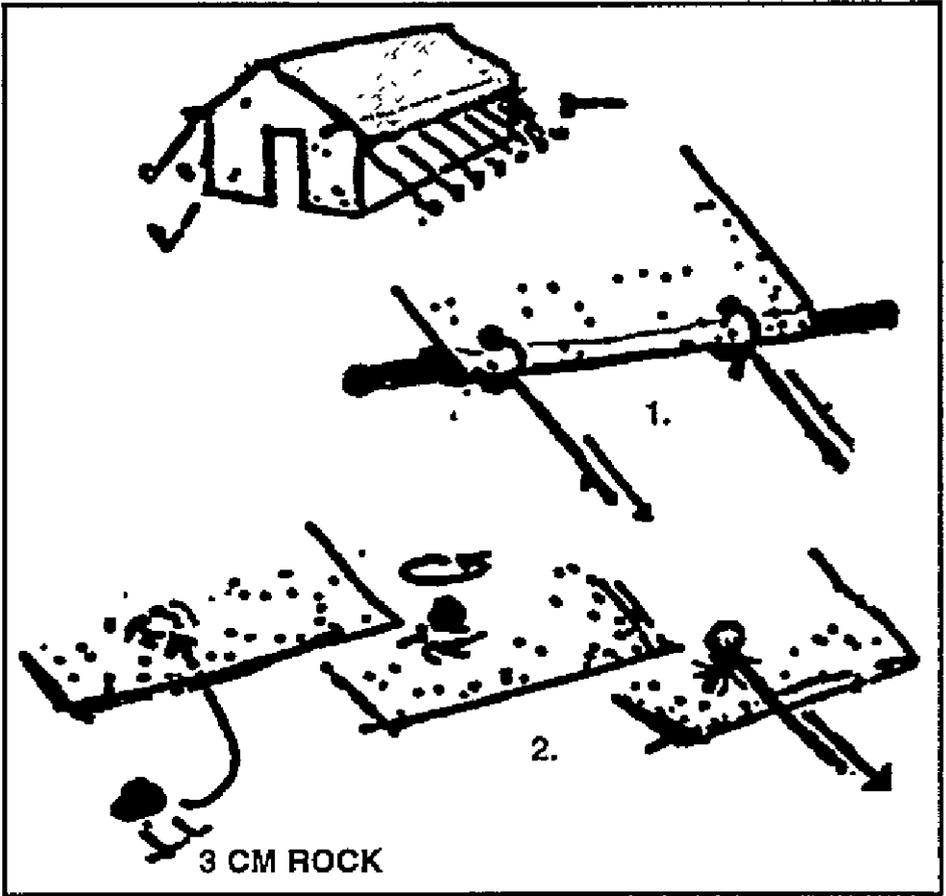
### Hot Weather Conditions:

1. Turn the white side of the sheeting towards the outside to reflect as much of the sun's heat as possible
2. Make the roof of any new building as high as possible. three and one-half meters at the highest point is good.
3. Vent the roof to let the super hot air escape, and reduce the temperature inside the building. Ventilation through doors and windows helps but *is not enough*.



#### Cold Weather Conditions:

1. Turn the long side of the building towards the warmth of the sun.
2. Turn the dark (tan) side of the sheeting towards the outside to absorb the heat of the sun.
3. Make the roof of any new building as low as possible. Two and one-half meters at the highest point is good.
4. Shovel dirt against the outside of the building walls to help hold the heat inside.
5. Special care must be taken when heating the inside since plastic sheeting will burn.
6. Tack a second layer of OFDA plastic or any other material on the inside to create a double layer for insulation

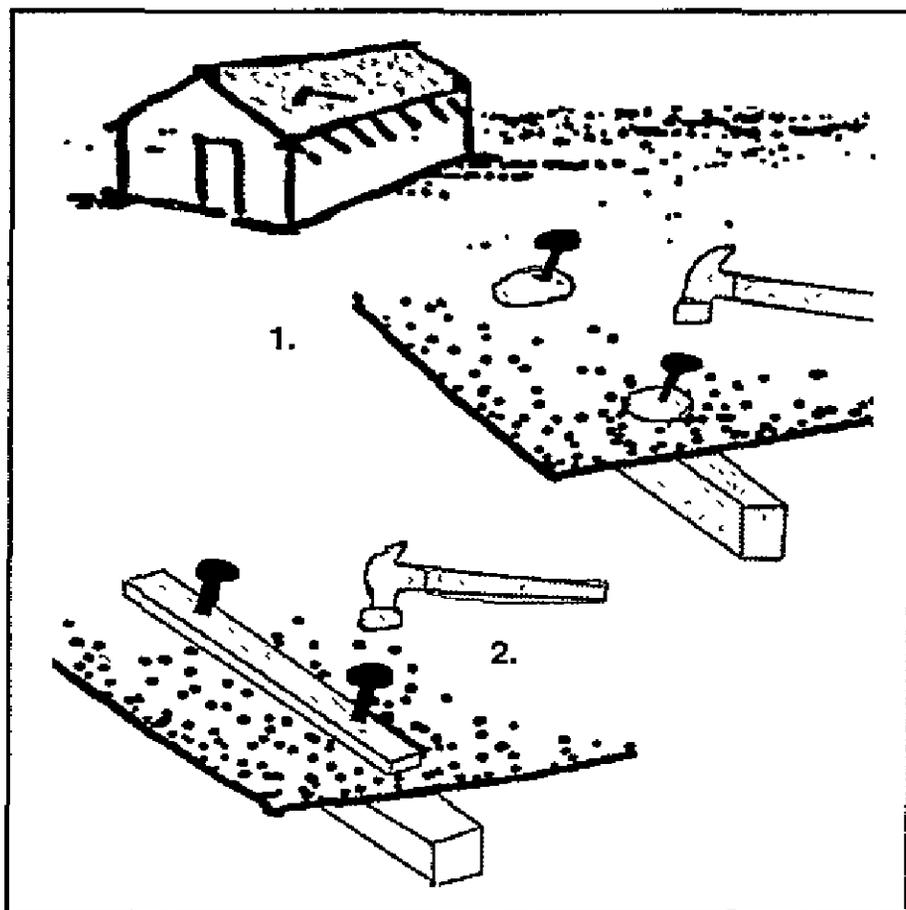


### Setup:

Plastic sheeting can be stretched over a building and then anchored to the ground with ropes and stakes like a tent.

1. Wrap the plastic around stick or bamboo. Tie the rope around the stick.
2. Place a small rock under the sheeting. Twist the sheeting around the rock.

Use as many stakes or anchors as needed to keep the plastic as tight as possible.

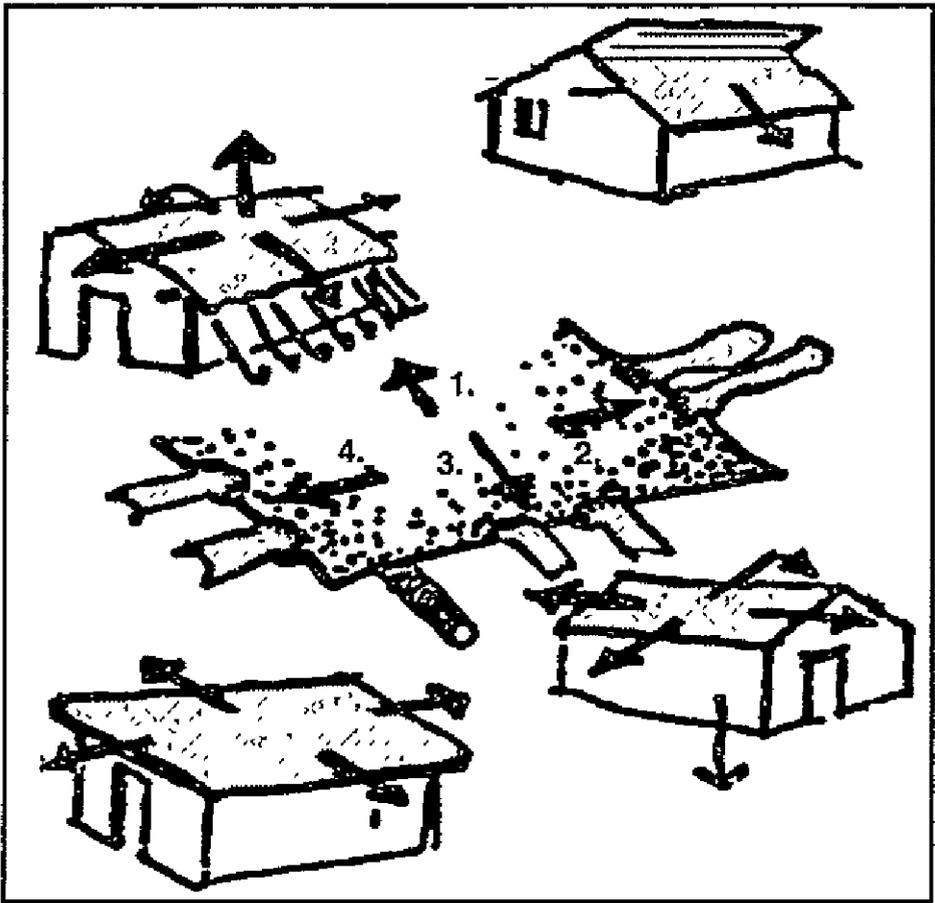


Plastic sheeting can be stretched over a building and nailed to the frame of the building

1. Hammer the nails through some type of washer, piece of tire, rubber, flattened bottle cap; or
- 2 Through a batten

Use tape for repair purposes only.

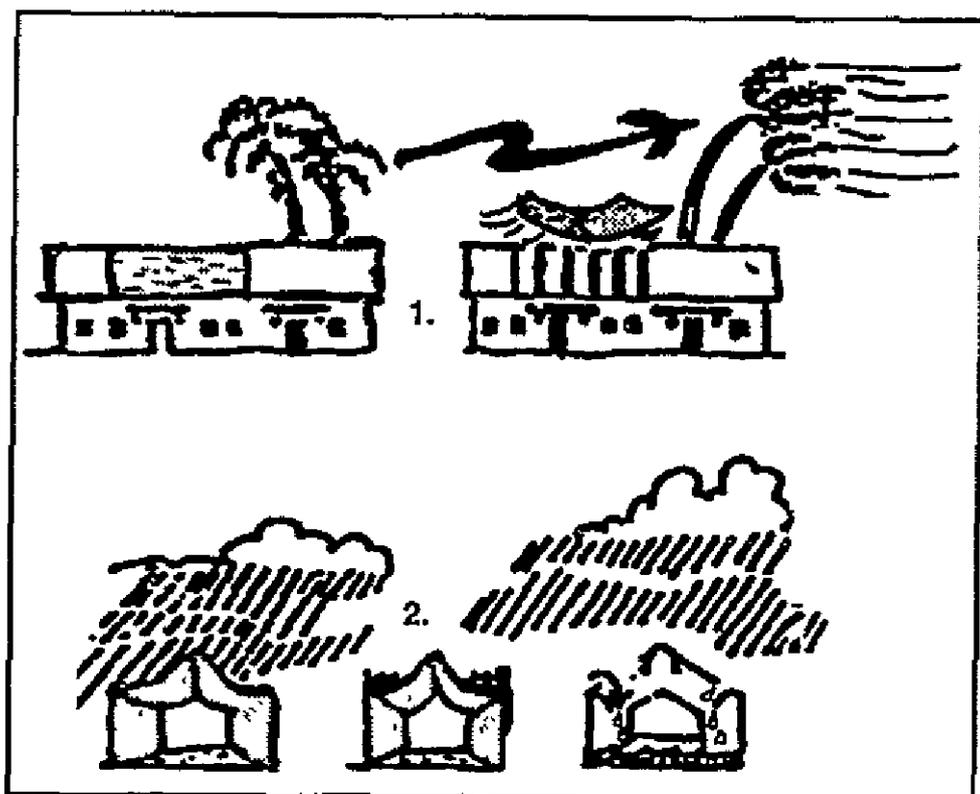
**Caution:** Plastic sheeting will burn. Be careful with all open flames.



Stretch the sheeting over the roof. Pull the plastic sheeting as tight as possible before connecting it to the roof frame.

To get the sheeting tight, pull it firmly in all four directions.

It is very important to stretch the plastic tight and to attach it securely to the roof frame or to anchor it to the ground.



**Precaution:**

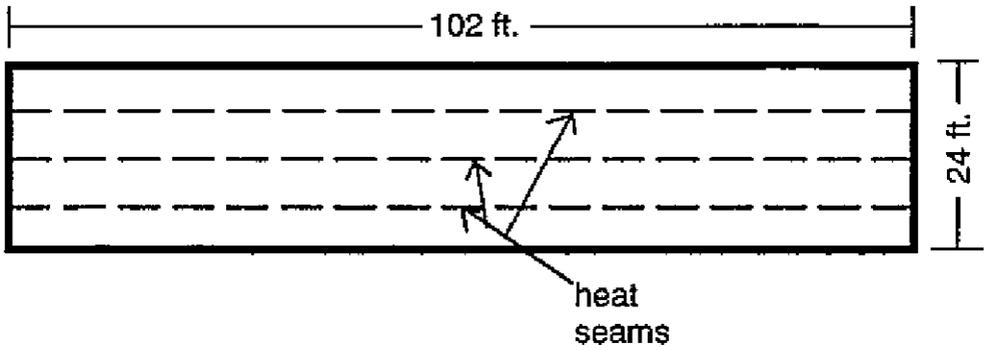
1. During windy weather, loose sheeting will flap violently and cause (more) damage to the structure.
2. During rainy weather, loose sheeting will collect rainwater which can cause (more) damage to the structure.

After a strong wind or rain storm, look at the building for signs of wear and tear. Tighten all ropes and use additional nails if needed to tighten the sheeting.

Use two 6 by 26 feet pieces to cover an 8-foot-square roof. Place seams *along* supports and secure ends tightly.

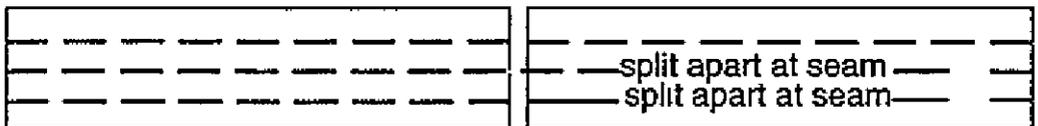
Doors should be slit in after connecting to offer a tight opening against sand and dust. Narrow 1 and 2 feet pieces left over can serve as curtains over slits and windows.

## Shelter Construction Suggestions for Plastic Sheeting



- Recommend 10 foot Square shelter (four shelters per roll)  
(one roll is 102 feet long with tic marks every 5 feet)

After laying the sheet out flat, fold it in half and cut across the fold, (1 foot past the tenth tic mark) Each half will construct two of the following shelters.



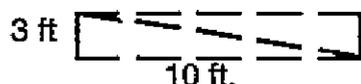
(24 feet wide by 51 feet long)

Split (zip) off two strips of plastic (each strip will be 6 feet wide by 51 feet long). Each strip will wrap the wall of a 10 foot square.

Now cut 10 feet (two tic mark) off each 6 feet by 51 feet strip (one 41-foot strip and 10-foot piece per shelter)



Cut the 10-foot long strips down the center for two 3 by 10 feet strips (fold in half lengthwise and cut at fold). One piece will become the top cover of the front of the shelter where the wall will be higher than 6 feet



Cut one of these 3 by 10 foot strips across the corners lengthwise to form two triangles 3 feet high and 10 feet long. These triangles will become the extension of the side wall beyond 6 feet high.

Or, cut the 6 by 10 feet piece. Across both corners to make two 10-foot long 3-foot high triangles for a different shape roof.



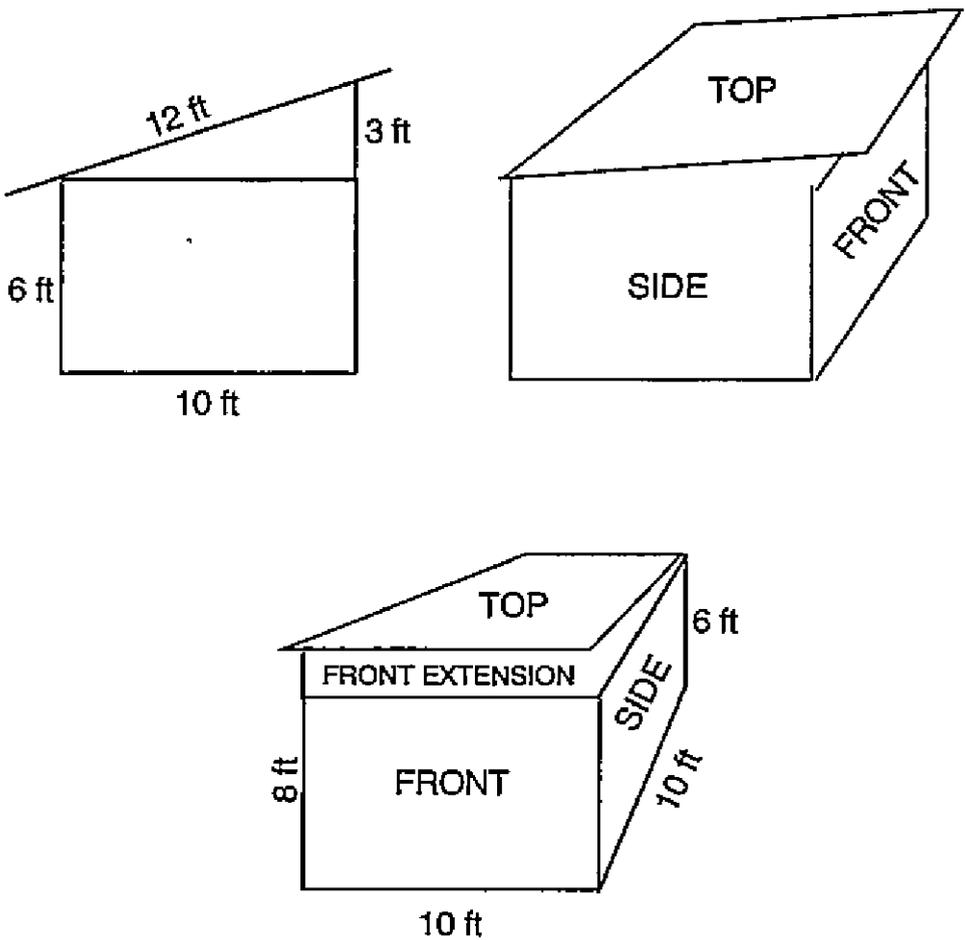
Take the larger remaining piece, fold it in half and cut at the fold for two pieces at 12 by 25+ feet. Cut each of these across the seams at 10 feet (two tic marks) resulting in two pieces of 10 by 12 feet and two pieces 12 by 15 feet (the floors and roofs for two shelters).

Piece sizes for the covering of a 10-foot square framed shelter.

- 2 each pieces 10 by 12 feet and 12 by 15+ feet (floor, roof)
- 1 piece 6 by 41 feet (walls)
- 1 piece 3 by 10 feet (front wall height extension) for shed type
- 2 triangles, 3 feet by 10 feet (depends on type shelter)

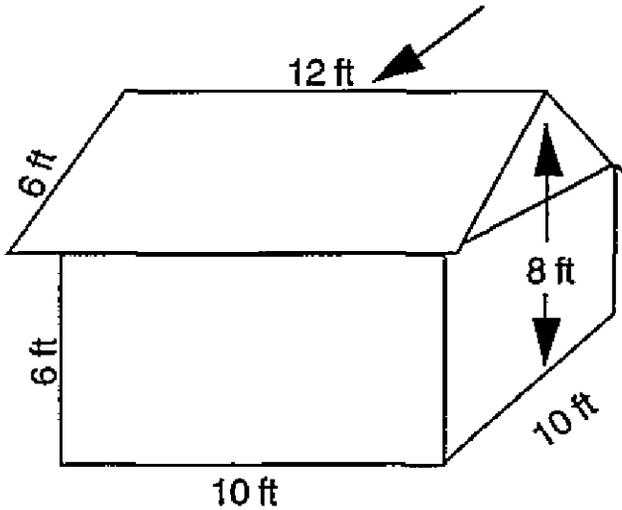
## Sample Construction Designs

When the frame is covered, the shelter should look like one of the below (not drawn to scale). Use adhesive tape to seal corners and to cover nail or staple holes to prevent leaks. Doors and windows may be cut in place where desired and the plastic removed may be used as curtains or as future patching materials.



The second style shelter, using the two triangular shaped pieces, utilize the same 10-foot-square with 6-foot high base structure as pictured below. Only the roof is different.

This style will require a ridge pole beam from front to rear.



Roof rafters/beams may run from front to rear or from top center beam to the sides, depending on the ability to connect the rafters to the ridge beam or the structure itself. These plastic covers should overlap the wall cover to prevent leaks and to cover cracks. They may be taped together.

Ensure that the building frame is securely anchored to the ground

## **Personal Health and Critical Incident Stress**

This section provides a guide to recognizing and meeting common physical and emotional problems encountered during disaster relief activities. Experience has shown that promoting and maintaining good health, especially by coping with the stresses encountered overseas, are the keys to successful performance

### **Briefings:**

The most important key to personal health and safety is to follow briefings given by OFDA, State Department, the DART team leader, the USAID Mission in-country, the U.S. Embassy or Consulate in-country, and affected country contacts. They can provide up-to-date details on disease, sanitation, food and water safety, personal and property security, and other information to keep relief workers healthy and safe during the assignment.

Disaster workers should never knowingly put their lives in jeopardy. Tasks should be accomplished by putting safety first. "Stay alert, keep calm, think clearly, and act decisively" should be their motto

### **Managing Culture Shock:**

International disaster relief workers may experience two different but interrelated types of stress: first is culture shock, which comes from suddenly being placed in a strange foreign environment. The second is the emotional and physical impact that often comes from being immersed in a disaster.

Between arriving in-country and reaching the disaster site, relief workers may experience classic culture shock. The relief worker is a foreigner; may be frustrated because of inability to communicate with the local population; anxiety and frustration may erode customary level of self-confidence.

The relief worker should expect to be disoriented and confused and realize that it is natural and often happens to others in similar situations. Patience, realistic expectations of an ability to make a difference, and a sense of humor are good coping strategies in these circumstances. The relief worker should not expect the affected country and the victims to change their ways of doing things to accommodate to relief workers.

### **Critical Incident Stress:**

No one who sees a major disaster remains emotionally untouched by it. Typical reactions are frustration and a feeling of hopelessness; that there is simply too much suffering and relatively little impact one person can have.

The combined effects of cultural and job stress make relief workers vulnerable to physical and emotional exhaustion. Some people refer to this as "burnout." It can happen to anyone.

The disaster-related stress caused by these factors is often referred to as **critical incident stress or CIS**. A critical incident is any incident so unusually stressful to an individual as to cause an immediate or delayed emotional reaction, surpassing available coping mechanisms. Critical incidents take many forms, including all emergencies that cause personnel to experience unusually strong reactions.

The effects of critical incidents can include profound behavioral changes that may occur immediately or may be delayed for months or years.

### **How Disaster Relief Workers Are Affected by Stress During Disaster Operations:**

- They may experience physical symptoms associated with stress, such as headaches, upset stomach, diarrhea, poor concentration, and feelings of irritability and restlessness.
- They may become tired of the disaster and prefer not to talk about it, think about it, or even associate with co-workers during time off. They may become tired of continual interaction with victims and may want to isolate themselves during time off.
- There may be a feeling of frustration or guilt because they miss their families, and they are unavailable to their families both physically and emotionally due to their psychological involvement in the disaster, fatigue, and so forth.
- They may feel frustrated with family and friends when they are able to contact them because the relief workers feel that families and friends simply cannot understand the disaster experience. If family and friends become irritated, it can compound the problem, and temporary isolation and estrangement may occur.

## **How To Minimize Stress During a Disaster Operation:**

- As much as possible, living accommodations should be personal and comfortable. Mementos from home may help disaster workers to keep in touch psychologically.
- Regular exercise consistent with present physical condition and relaxation with some activity away from the disaster scene may help.
- Getting enough sleep and trying to eat regular meals even if the workers are not hungry will help. Workers should avoid foods high in sugar, fat, and sodium, such as donuts and fast foods. Taking vitamin and mineral supplements may help the body to continue to get the nutrients it needs.
- Excessive use of alcohol and coffee should be avoided. Caffeine is a stimulant and should be used in moderation as it affects the nervous system, making relief workers nervous and edgy.
- Although relief workers need time alone on long disaster operations, they should also spend time with co-workers. Both experienced and new relief workers should spend rest time away from the disaster scene. Talking about normal things (home, friends, family, hobbies) other than the disaster is a healthy change of pace.
- Humor helps ease the tension. However, use it carefully as victims or co-workers can take things personally, resulting in hurt feelings if they are the brunt of "disaster humor."
- When on the job, it is important for relief workers to take breaks during the day, especially if they find themselves making mistakes or unable to concentrate.
- Relief workers should try to stay in touch with family back home if they can. Communication helps prevent the sense of being strangers when they return after the disaster.

Disaster managers can take specific, practical action to prevent and reduce the effects of critical incident stress, consequently avoiding the personal and organizational costs associated with them. Steps include:

- Learning to identify and respond to critical incident stress in personnel.
- Educating team members in advance about potential harmful effects of critical incidents.

**It's normal to experience stress during a disaster operation, but remember...stress can be identified and managed.**

## Miscellaneous Information Conversion Tables

### Temperature Conversion Factors:

Centigrade to Fahrenheit    Centigrade X 1.8 + 32 = Fahrenheit

Fahrenheit to Centigrade    Fahrenheit - 32 X 0.555 = Centigrade

### Weight of water by volume (at 16.7 °C or 62 °F):

1 liter	=	1 kilogram
1 U.K. gallon	=	10 pounds
1 U.K. gallon	=	1.2 U S gallons
1 U.K. gallon	=	4.54 liters
1 U.S. gallon	=	0.833 U.K. gallons
1 U.S. gallon	=	8.33 pounds
1 U.S. gallon	=	3.79 liters
1 liter	=	0.26 gallons
1 cubic foot of water	=	62.3 pounds

### Distance:

1 nautical mile = 1.152 statute miles = 1.852 kilometers

## **Chapter VI**

# **Commonly Used Acronyms and Terminology**

## Commonly Used Acronyms and Terminology

**ADRA (Adventist Development and Relief Agency International)—U.S. PVO.** Works to improve the quality of life for people in the poorest parts of the world. Responds to disasters throughout the world. Immediate aid is coupled with long-term rehabilitation projects that help communities get back on their feet

**Affected Country—**Term used to define a country stricken by a disaster.

**Affected Population—**People requiring immediate emergency assistance from outside sources as a result of a disaster situation or event.

**AFRICARE—U.S. PVO** Works to develop water resources, increase food production, encourage environmental management practices, deliver basic health services, and provide emergency assistance to refugees and displaced people in rural Africa.

**AICF (Action Internationale Contre la Faim)—European NGO.** Focuses on primary health care, potable water, environmental sanitation, and agro-based income generation

**AID (Agency for International Development (officially, USAID))—**The official U.S. Government agency responsible for international assistance and development.

**Air Serv International—U.S. PVO** Provides air transportation and related aviation services to relief agencies in remote areas of the world.

**Americares—U.S. PVO.** Offers donated assistance to people in countries of turmoil. May also commit in these countries to assist with ongoing programs that will contribute help on a continual basis.

**ARC (American Red Cross)—U.S. PVO.** Channels financial aid, material, and technical personnel to victims of natural disasters worldwide, multilaterally through the IFRC and directly through sister national societies. Assists ICRC in providing relief to victims of armed conflict. Contributes to disaster preparedness of other national societies.

**ARI (Acute respiratory infections)**—ARI's are serious, potentially fatal infections in a displaced and malnourished population.

**Assessments**— **Damage assessment** is the process of evaluating the damages and losses caused by a disaster

**Situation assessment** is the process of evaluating the situation caused by a disaster, such as the number killed, injured, and affected.

**Needs assessment** is the process of evaluating the needs of the affected population as a result of the disaster

**Assisting Country**—Term which more specifically defines a country providing aid to a disaster stricken country (affected country). Assisting countries may or may not be a donor country.

**ATA**—Actual time of arrival.

**ATD**—Actual time of departure.

**Bailey Bridge**—Transportable (in pieces) temporary bridge.

**Cable**—Secured (classified) and unsecured (unclassified) hard copy telecommunications system used by AID and State Department to pass information back and forth worldwide.

#### **Cargo Abbreviations and Terms:**

**Air Waybill (AWB)** is a document serving as a guide to a carrier's staff in handling, dispatching, and delivering the consignment. It is a non-negotiable document.

**Bill of Lading** is a receipt for goods, contract for their carriage, and documentary evidence of title to goods. As such it is a bill of exchange, a negotiable document of title. Usually issued in sets of three originals and several copies.

**C and F** **Cost and Freight.** The shipper pays for freight to the named port of destination.

**CIF** **Cost, insurance, and freight.**

**COD** **Cash on delivery.**

**Dead Weight (DWT)** is a vessel's dead weight in the number of tons (2240 pounds) required to sink the vessel in the water to its load line. DWT includes cargo, bunkers, and stores. **DWT cargo capacity** is the weight available for cargo after all other allowances have been made.

**FOB**                    **Free on Board.** The price of goods covers transportation to the port of shipment, loading, and stowage. Not transportation costs to final destination

**Long Ton**            A measure of weight equivalent to 20 hundred-weight (cwt) of 112 lbs each = 2,240 lbs = 1016 kilos.

**MT**                    **Metric Ton.** MT = 1,000 kilos = 2,205 lbs

**Short Ton**            2,000 lbs. = 907.2 kilos

**CIDA (Canadian International Development Agency)**—Canadian government's foreign assistance and development agency

**CRS (Catholic Relief Services)**—U.S. PVO. Operates relief, welfare, and self-help programs to assist refugees, war victims, and other needy people. Emphasis on distribution of food, clothing, and medicine

**CARE (Cooperative for American Relief Everywhere)**—U.S. PVO. Provides relief and development programs in the areas of health, nutrition, AIDS, population management, natural resources management, agriculture, small economic activities, and emergency assistance.

**CDC (Centers for Disease Control)**—A part of the U.S. Public Health Service, located in Atlanta, Georgia.

**CM (Chief of Mission)**—Refers to the highest ranking official in a country's embassy.

**Cold Chain**—The refrigerated transportation system for vaccines from the manufacturer to the individual.

**Concern (Irish Concern)**—Irish NGO. Helps communities improve their health conditions and establish self-reliant systems for access to needed health care.

**CSB (Corn-Soya-Blend)**—A fortified cereal blend used for general food distribution.

**CSM (Corn-Soya-Milk)**—A protein fortified blended dry food used for supplementary feeding.

**CWS (Church World Service)**—U.S. PVO. Affiliated with the National Council of Churches of Christ in the U S Sponsors programs to provide relief in disaster situations, to respond to refugees and displaced people, and to support self-reliant and participatory socioeconomic development.

**Cyclone**—Name given to severe tropical storms in the Indian Ocean and South Pacific Ocean.

**DALIS (Disaster Assistance Logistics Information System)**—A commodities tracking system developed by DOD and OFDA. It is a program that uses database software.

**DART (Disaster Assistance Response Team)**—Name for OFDA's field operational response capability.

**DCM (Deputy Chief of Mission)**—The second ranking person in an embassy.

**Death Rate**—see mortality rate.

**Denton Amendment**—Law allowing the U S. military to air/sea lift donated humanitarian relief commodities for NGO's, on a space-available basis to countries affected by disasters.

#### **Department of Defense Terms:**

##### **Aircraft Types**

**C-5**—(Galaxy). U.S. Air Force's largest cargo aircraft.

**C-12**—U.S. military small passenger aircraft  
Commercial version named King Air.

**C-130**—(Hercules). U.S. military cargo aircraft.

**C-141**—(Starlifter). U.S. Air Force cargo aircraft.

**CH-47**—(Chinook). U.S. Army heavy-lift helicopter.

**CH-53A—(Sea Stallion).** U.S. Navy heavy-lift helicopter.

**H-3—(Sea King).** U.S. military medium-lift helicopter.

**AO** Area of Operation.

**AORs** **Areas of Responsibility.** The U.S. military divides the world into five geographical areas of responsibility which are each supervised by area commanders (area CINC's). There are other commands with worldwide responsibilities (see SOCOM and TRANSCOM) The commands are:

**SOUTHCOM—Southern Command:** Latin America land area. Headquartered in Panama.

**PACOM—Pacific Command:** Pacific Ocean, part of Indian Ocean, and East and Southeast Asia. Headquartered in Honolulu, Hawaii.

**CENTCOM—Central Command:** Countries bordering the Red Sea and the Persian Gulf. Headquartered in Tampa, Florida.

**EUCOM—European Command:** Europe, Africa not in CENTCOM, the Mediterranean Sea, and bordering countries. Headquartered in Germany.

**USACOM—The Atlantic Ocean and the Caribbean.** Headquartered in Norfolk, Virginia.

**SOCOM—Special Operations Command:** Worldwide. Headquartered in Tampa, Florida

**TRANSCOM—Transportation Command:** Unified command providing management of all surface/air/sea lift. Headquartered at Scott Air Force Base in Illinois.

**BDE** Brigade.

**BN** Battalion

- CA**            **Civil Affairs Units.** Able to assist civil governments and their citizens in disasters. Part of SOF.
- CINC**        **Commander in Chief.** Of an AOR.
- CMO**        **Civil Military Operations.** U.S. military term.
- CMOC**       **Civil Military Operations Center.** U.S. military term.
- CMOT**       **Civil Military Operations Team.** U.S. military term.
- CP**         **Command Post.** Military term.
- CTF**        **Combined Task Force.** Military force made up of two or more allied nations.

**Command Staff designations: S=Special, G=General, J=Joint**

- S/G/J 1 = Admin  
 S/G/J 2 = Intelligence  
 S/G/J 3 = Operations  
 S/G/J 4 = Logistics  
 S/G 5 = Civil Affairs  
 J 5 = Plans and Policies  
 S/G/J 6 = Communications

- JCS**        **Joint Chiefs of Staff.**
- JTF**        **Joint Task Force.** DOD force made up of two or more military services and used in an operation.
- HAST**       **Humanitarian Assistance Survey Team**  
 Deployed by CINC to assess existing conditions and need for follow-on forces.
- HMMWV**    **(hum vee) Highly Mobile Multipurpose Wheeled Vehicle.** U.S. military term for the successor to the "Jeep".
- MRE**       **Meal, Ready-to-Eat.** Complete individual combat meal in a pouch. Usually heated in boiling water.

**Operation** \_\_\_\_\_. Name designator for each military operation, e.g , Operations Provide Hope, Sea Angel, Provide Comfort, Restore Hope...

**PSYOPS** **Psychological Operations.** Part of Special Operations Forces.

**ROE** **Rules of Engagement.**

**SOF** **Special Operations Forces.**

**Zulu** (see Zulu Time)

**DHA (United Nations Department of Humanitarian Affairs)**—Focal point in the U.N. system for disaster relief affairs

**Displaced Person**—Usually refers to an individual who has been forced to move from his/her home to some other location within the same country. Within the U S. Government, usually assisted by OFDA.

**DOD**—Department of Defense.

**Donor Country**—Country that provides aid to a developing country.

**DRD (Disaster Response Division)**—An OFDA division that is responsible for developing and implementing OFDA's disaster response strategy.

**DSM**—Dry Skim Milk.

**DTP (diphtheria-tetanus-pertussis)**—Immunization for small children.

**EC (European Community)**—Twelve European nations pledged to unite by 1999 into a federation with a single currency, central bank, and a common defense and foreign policy. Headquarters are in Brussels, Belgium.

**ECHO**—European Community Humanitarian Office.

**ETA**—Estimated time of arrival.

**ETD**—Estimated time of departure.

**Ex-pat (Ex-patrate)**—Individual residing in a country other than their own.

**FAA**—Foreign Assistance Act of 1961, as amended.

**Fairfax**—Fairfax County (Virginia) Fire and Rescue Department Specially trained members of the department are deployable on OFDA DART's in the SAR component.

**FAO (Food and Agriculture Organization)**—This U.N. agency serves as the organizing and coordination agency to plan and execute development programs within the whole range of food and agriculture, including forestry and fisheries. Headquartered in Rome.

**FAS (U.S. Department of Agriculture, Foreign Agricultural Service)**—Office within USDA responsible for procurement and shipping of P.L.480 food commodities.

**Fast On-Set Disasters**—Also known as sudden or quick onset disasters. Disasters such as earthquakes, hurricanes, volcanic eruptions, floods, and tsunamis.

**FEMA (Federal Emergency Management Agency)**—U.S. agency responsible for coordinating federally declared disasters in the United States and its territories.

**FEWS (Famine Early Warning System Project)**—Information system designed and financed by AID. Mandate is to identify problems that could lead to famine conditions in 11 African countries so that such conditions can be preempted, thereby helping ensure food security in these countries

**FFP (Food for Peace)**—Refers to the overseas food donation program authorized by Title II of Public Law 480, passed by the 83rd Congress, second session in 1954. Under this program, U.S. agricultural surpluses are donated to "friendly governments" through non-profit relief organizations or PVO's such as CARE and Catholic Relief Services. The program is administered jointly by AID and the Department of Agriculture.

**FLY**—Term used to describe weather covers for a tent or shelter cover set up to keep individuals shelter from the elements.

**Food Basket**—The particular selection of food commodities that are handled by the assistance operation and included in the rations distributed to the target beneficiaries.

**Food for Work**—Disaster relief intervention designed to use capabilities of the affected population to improve infrastructure and support systems within the community by paying workers with food.

**Food Pipeline**—Term used to describe the various location points and the amount of food going to an affected population. Locations include the port of origin, the ship on the high seas, the port of entry, and the distribution system in the affected country

**Food Categories or Types**—Food distributed in disaster relief usually falls into three categories or types:

**Cereals**—Corn, wheat, rice, sorghum.

**Pulses**—Beans, peas.

**Oils**—Vegetable oil, butter oil.

**FS (Forest Service)**—OFDA has an RSSA with the Forest Service to provide disaster management training and technical specialists for DART's.

**GO\_**—Three letter abbreviation for Government of \_\_\_\_\_, such as GOK (Government of Kenya) or GOJ (Government of Japan).

**GOAL**—Irish humanitarian relief agency. Programs include food and health relief activities.

**Global Affairs**—(See humanitarian and refugee affairs).

**Grant (as used in P.L. 480 Programs)**—The transfer, by the United States to foreign governments, of foreign currencies acquired by the United States through sales of United States farm products **GRANT** also is used in connection with the transfer, by the United States to foreign governments, of U.S. agricultural commodities by FAS and in connection with the transfer of money to various IO's and PVO's/NGO's to perform predefined relief activities.

**GTZ (German Technical Assistance Agency)**—The German government's foreign assistance and development agency.

**Handbook 8**—U.S. AID's Handbook covering the foreign disaster assistance activities.

**HDR (Humanitarian Daily Ration)**—DOD ration introduced in October 1993 for use by DOD in humanitarian relief efforts. Designed to be acceptable by all ethnic and religious groups. To be used as a stop-gap feeding asset until other foods are chosen to meet specific or multiple nutritional deficiencies can arrive

**HF Radios (High Frequency Radios)**—Radio communication system which does not rely on line of site.

**Host Country**—Country in which AID has a development or disaster assistance program

**HQ**—Headquarters.

**Humanitarian and Refugee Affairs Office (HRA)**—Deputy Assistant Secretary of Defense office within DOD which is the initial point of contact for OFDA when OFDA desires to request the use of DOD assets. See DOD Directive 5100.46 or USAID Handbook 8 for details of relationship

**Hurricane**—Name given to severe tropical storms in the eastern Pacific and western Atlantic.

**IBRD (International Bank for Reconstruction and Development)**—The World Bank.

**ICRC (International Committee of the Red Cross)**—Private, international relief organization with headquarters in Geneva. It works principally in cases of civil conflict, ensuring legal protection for victims, and acting as a neutral, independent humanitarian organization in complex emergency situations. At times they may get involved in humanitarian operations. It is neutral as regards politics, religion, and ideology. Its international character derives from its mission, which is enshrined in the Geneva Conventions.

**IMC (The International Medical Corps)**—U.S. PVO. Provides health care and establishes health training programs in developing countries and distressed areas worldwide, often where few other relief organizations operate. Its goal is to promote self-sufficiency through health education and training.

**IFRC (International Federation of Red Cross and Red Crescent Societies)**—Formerly known as the League of Red Cross and Red Crescent Societies. Located in Geneva, Switzerland, this is the umbrella organization for all Red Cross and Red Crescent Societies.



**InterAction** (American Council for Voluntary International Action)— A membership association of U.S. PVO's engaged in international humanitarian efforts, including relief, development, refugee assistance, public policy, and global education.

**INTERTECT**—A consulting company specializing in services that deal with displaced persons and refugee issues.

**IO** (International Organization)—Acronym for organizations such as United Nations and IOM that are international in their scope.

**IOM** (International Office for Migration)—Geneva-based international organization that provides arrangements for the transport of refugees and migrants and provides other resettlement services worldwide to meet the specific needs of the receiving countries.

**IRC** (International Rescue Committee)—U.S. PVO. Assists refugees and internally displaced victims of war and civil strife. Activities include medical support, self-help, and public health, including water and sanitation, education, maternal child care, and shelter projects.

**Irish Concern**—Irish PVO specializing in nutritional rehabilitation and health care.

**ITSH** (Internal Transport, Storage, and Handling)—Costs associated with the internal transport, storage, and handling of relief commodities from the seaport of entry to the distribution point.

**JICA** (Japan International Cooperation Agency)—Japanese government's foreign assistance and development agency.

**LWF** (Lutheran World Federation)—Umbrella organization for Lutheran relief and developing country organizations.

**LWR** (Lutheran World Relief)—U.S. PVO. Provides financial, material, and personal support, usually through counterpart church-related agencies, in the areas of disaster relief, refugee assistance, and social and economic development.

**Maize**—Another name for corn.

**MCH** (Mother-Child Health)—Refers to programs that are targeted at improving the health of mothers with children.

**MDRO (Mission Disaster Relief Officer)**—This is the individual in a USAID Mission who has the responsibility for developing and implementing a mission disaster relief plan. Normally the point of contact for OFDA Washington and a DART.

**Metro Dade**—Metro Dade County (Florida) Fire and Rescue Department. Specially trained members of the department are deployable on OFDA DART's in the search and rescue component.

**Monetization**—Relief assistance programs where relief commodities (usually the most sought after types), are sold by local merchants to affected populations using local currencies. Merchants are able to purchase the commodities at subsidized rates from participating donor countries. Donor countries use profits from the sales to fund community improvement projects that are carried out by the local affected population. Monetization attempts to increase the purchasing power of the affected population which can then begin the process of reestablishing economic cycles within the community.

**Morbidity**—The incidence or prevalence of a disease or of all diseases in a population.

**Mortality Rate**—Also known as death rate. A ratio of deaths/10,000 persons/day, based on the number of deaths times 10,000 divided by the number of days times the population.

**MOU (Memorandum of Understanding)**—A common form of agreement, usually with USG agencies, that is less formal than a contract

**MSF (Medecins Sans Frontieres (Doctors Without Borders))**—Relief organization that specializes in medical assistance. MSF has core MSF organizations located in France, Holland, Belgium, Spain, and other national country offices including the United States

**MUAC (Mid-upper-arm circumference)**—Method of measuring rapidly assess the nutritional status of young children.

**NASAR (National Association for Search and Rescue)**—Through grant agreement with OFDA, coordinates preparation of search and rescue resources for deployment on OFDA DART's.

**NDMS (National Disaster Medical System)**—Part of U.S. Public Health Service, responsible for developing and implementing a system to support medical needs during major disasters that have a large Federal medical response need.

**NFDM (Non-fat Dry Milk)**—U.N. refers to it as dry skim milk (DSM).

**NGO (Nongovernmental Organization)**—Refers to transnational organizations of private citizens that maintain a consultative status with the Economic and Social Council of the United Nations. NGO's may be professional associations, foundations, multinational businesses, or simply groups with a common interest in humanitarian assistance activities (development and relief). NGO is a term normally used by non-U.S. organizations as the equivalent of the term PVO (see PVO) used in the United States.

**OAS (Organization of American States)**—Intergovernmental organization of all North, Central, South American, and Caribbean countries except Cuba and Canada.

**OAU**—Organization of African Unity.

**ODA (Overseas Development Administration)**—British government's foreign assistance and development agency.

**OE (Operating Expenses)**—Money given to OFDA to fund travel, per diem, salary, and office expenses of AID direct hire employees.

**OFDA (Office of U.S. Foreign Disaster Assistance)**—Office responsible for the coordination of all U.S. Government assistance to foreign countries after a natural or manmade disaster.

**OS (Operations Support)**—OFDA division responsible for conducting the operational implementation of OFDA's disaster response strategy.

**OSOCC (On-Site Operations Coordination Center)**—Location of a coordinating group set up near an earthquake disaster and composed of staff from affected country local officials, assisting country SAR teams, and UN-DHA, which meets to coordinate the use of assisting country SAR teams. An OSOCC reports to and receives direction and priorities from local officials and is only set up at the request of the affected country.

**ORT (Oral Rehydration Therapy)**—Treatment used for dehydrated patients, usually children, to prevent death from dehydration which is often the result of diarrheal diseases.

**ORS (Oral Rehydration Salts)**—Electrolyte replenishing salts which often come in premixed packages. Used in ORT.

**PAHO (Pan-American Health Organization)**—U.N. agency responsible for monitoring health training, health systems, and disaster-related health issues in the Americas.

**Partners (Partners of the Americas)**—Pairs U.S. States with regions and countries of Latin America and the Caribbean to foster interAmerican friendship and cooperation to carry out projects in areas such as natural resource management, environmental education, democratic initiatives, child health, and nutrition, emergency preparedness, and drug abuse prevention and education.

**PEM (Protein-energy malnutrition)**—Major cause of death among infants and young children, usually caused by low food intake and infection. There are three types of PEM: nutritional marasmus, kwashiorkor, and marasmic kwashiorkor.

**PIO/T (Project Implementation Order/Technical)**—A term used by AID for documents authorizing a development/disaster response project or activity.

**PIO/C (Project Implementation Order/Commodity)**—A term used by AID for the documents authorizing the purchase of commodities.

**P.L. 480**—Public Law 480. The Agricultural Trade Development and Assistance Act of 1954, Public Law 480 has been the principal legislative authority for channeling U.S. food to needy countries. There are parts of the law that OFDA is associated with:

- Title I: Managed by USDA. Food aid sold to countries able to pay for food but experiencing foreign exchange difficulties. Local currency generated by sale of food on local markets is used by country governments for agriculture, trade promotion, and public infrastructure.

**Title II** Managed by AID. Provides emergency and non-emergency food aid in support of development projects—in many cases the food is given directly to individuals—through programs such as supplementary feeding, Food for Work, and disaster assistance.

**Title III:** Managed by AID. Provides food to needy countries that are ranked on need based on the food security index. Eligibility for Title III can be based on:

1. daily per capita consumption is less than 2300 calories,
2. mortality rate of children under 5 years of age in the country is in excess of 100 per 1000 births; and
3. country unable to meet its food security requirements through domestic production or imports due to a shortage of foreign exchange earnings

**Section 416 of the Agricultural Act of 1949.** Managed by USDA. Allows donation of surplus food to developing countries. Relieves temporary commodity shortfalls and generates local funds to assist needy people.

**Plastic Sheeting** —OFDA contracts for the manufacture of a special coated scrim net plastic sheeting that is both durable and long lasting. OFDA distributes the plastic sheeting in rolls (one roll/box) which are 24 feet wide and 102 feet long.

**PMP (Prevention, Mitigation, and Preparedness)**—An OFDA division that is responsible for developing OFDA's long-term strategies in disaster prevention, mitigation, and preparedness.

**Prevention**—Encompasses those activities taken to prevent a natural phenomenon or potential hazard from having harmful effects on either persons or economic assets. Includes channelling the direction of debris flow away from population centers, construction of dams or dikes to eliminate flooding, and safe destruction of outdated hazardous materials.

**Mitigation**—Concentrates on reducing the harmful effects of a disaster. Accepts the occurrence of disasters, but attempts to limit their impact on human suffering and economic assets. Includes improving building standards, installing hurricane straps to reduce wind damage to roofs, and modifying crop patterns to reduce vulnerability.

**Preparedness**—Aims to limit the impact of a disaster by structuring the response and providing quick, effective actions after the disaster. Addresses actions in both the pre-disaster and post-disaster phases. Also includes early warning systems.

**Program Money**—Money given to OFDA to fund its program activities, such as RSSA, PSC's, and grants.

**PSC (Personal Services Contractor)**—Individuals contracted by OFDA to assist OFDA in Washington and the field.

**USPHS (Public Health Service)**—The lead USG agency for medical/health policy and operational activities. CDC is under PHS

**Pulses**—Beans and peas.

**PVO (Private Voluntary Organization)**—Private non-profit humanitarian assistance organizations involved in development and relief activities. PVO is the equivalent term of NGO, which is normally used by non-U.S. organizations.

**Rapid Onset Disaster.** See fast on-set disaster.

**Ration**—The particular amount of food provided by an assistance program for beneficiaries in a specified target group to meet defined nutritional objectives. The "daily ration" is the amount provided per person per day. The "distribution ration" is the quantity provided to each individual or household at each distribution.

**Redd Barna**—Norwegian NGO associated with Save the Children Federation.

**REDSO (Regional Economic Development Support Office)**—AID offices located in Abidjan, Cote d'Ivoire, and Nairobi, Kenya that assist USAID Missions in Africa with economic and development programs.

**Reftel (Reference Telegram)**—In cable traffic "Reftel" means to reference information in a previous telegram (cable).

**Refugee**—Individual who flees to a foreign country to escape danger or persecution. Within the U.S. Government, usually assisted by the State Department's Refugee Bureau Program.

**Resrep**—See UNDP.

**RSSA (Resources Support Services Agreement)**—An agreement between AID and another U.S. agency or department that authorizes work.

**SAR (Search and Rescue)**—Component of the DART operations function, responsible for searching for and rescuing victims trapped in collapsed buildings, usually as a result of an earthquake. Also referred to as urban search and rescue

**SAT (Southern Air Transport)**—A for-profit air transport company located in Miami, Florida which provides aircraft for movement of food and relief supplies to disaster areas. Aircraft most often contracted by OFDA is the "Herc" (Hercules, Lockheed L-100-30)

**SATCOM System (Satellite Communications System)**—Refers to International Maritime Satellite (INMARSAT) communications system which can provide almost worldwide communications for voice, data, and fax using a system of geostationary satellites.

**SCF (Save the Children Federation)**—U.S. PVO. Helps disadvantaged children through programs in primary health, environmentally sound sustainable agriculture, microenterprise, and non-formal education. SCF has affiliates in several countries including the U.K. and Spain and is associated with Redd Barna in Norway.

**Seeds and Tools**—Distribution of seeds and tools is a relief intervention designed to give affected populations an opportunity to become more self-sufficient in food production.

**Selective Feeding**—A collective term used for all feeding/food distribution programs in which food is provided to specifically selected beneficiaries. It typically includes both supplementary and therapeutic feeding.

**Septel (Separate Telegram)**—In cable traffic, reference to a "septel" means that information will be contained in a separate telegram (cable) to follow.

**SFP (Supplementary Feeding Program)**—Feeding program offering extra calories for vulnerable populations of displaced persons.

**Sitrep**—A situation report on the current disaster situation and on the current U.S. response activities. Completed as required

**Slow Onset Disasters**—Disasters which develop over a period of time. Examples are famine, civil strife, and insect infestations.

**Sudden Onset Disasters**—See fast onset disasters.

**TA (Travel authorization)**—U.S. government form that authorizes someone to travel as stated on the TA.

**TDY**—Temporary Duty.

**TFP (Therapeutic Feeding Program)**—Intensive feeding program offering total calories for severely malnourished infants and small children in a health care setting (sometimes referred to as “nutritional rehabilitation”).

**Typhoon**—Name given to severe tropical storms in the western Pacific.

**UHF Radios (Ultra High Frequency Radios)**—Radio systems that are dependent on line of sight or repeaters.

**UN - United Nations** International organization formed to promote international peace, security, and cooperation under the terms of the U.N. Charter.

**UNDP (United Nations Development Program)**—This is the central U.N. development agency in developing countries. In most of these countries, UNDP has a resident representative (resrep). During a disaster the resrep leads the U.N. in-country team in needs assessment and local relief coordination of aid from the U.N. system. Headquartered in New York.

**UNHCR (The United Nations High Commissioner for Refugees)**—This U.N. agency is responsible for protecting refugees, seeking permanent solutions to refugee problems by facilitating voluntary repatriation and resettlement, and by providing supplementary aid and emergency relief to refugees as may be necessary. Headquartered in Geneva.

**UNICEF (United Nations Children’s Emergency Fund)**—This fund provides money for programs for health, education, and welfare for children and mothers in most developing countries. Headquartered in New York

**UNIPAC (UNICEF Packing and Assembly Center)**—A U.N. facility in Copenhagen, sponsored by the Danish government, with a stockpile of prepacked drugs and supplies identified on the WHO and UNHCR medical supply lists. These supplies must be ordered through OFDA Washington



**USAID (U.S. Agency for International Development)**—See AID above.

**USAID/Embassy**—Refers to the AID and State Department presence in a country.

**USAID Mission**—Name used to describe the office of the U.S. Agency for International Development in a foreign country.

**USG**—United States Government.

**USGS (United States Geological Survey)**—Provides earthquake information and technical specialists to OFDA as required.

**USUN**—United States Mission to the United Nations

**VHF Radios (Very High Frequency Radios)**—Radio system that is dependent on line of sight or repeaters.

**VITA (Volunteers in Technical Assistance)**—Provides OFDA with an information clearinghouse called the Disaster Information Center (DIC) located in Rosslyn, Virginia, which is designed to track private sector donations and offers of volunteer technical assistance for use by OFDA and PVO's responding to foreign disasters. Also provides computer bulletin board system VITANet, which enables PVO's to easily access the offers of private sector disaster assistance that are collected by VITA.

**VOLAGS (Voluntary agencies)**—Term used at one time to describe NGO's/PVO's, such as CARE and Catholic Relief Services

**WASH (Water and Sanitation for Health Project)**—Special project established by AID to provide comprehensive water and sanitation technical assistance to AID bureaus, missions, and OFDA and to other development organizations through the auspices of AID.

**Weight-for-Height**—Method of measurement to assess the nutritional status of young children by comparing the weight and height of random samples of the child population (less than 60 months) of an area at regular intervals (see also Z-Score).

**WFP (World Food Program)**—U.N. organization responsible for procuring, accepting, and distributing food commodities to NGO's and needy countries. Headquartered in Rome

**WHO (World Health Organization)**—U.N. organization responsible for coordinating international public health work. Headquartered in Geneva.

**WHO Emergency Kit**—Standard list of drugs and medical supplies WHO has identified and can make available as needed for and emergency. The Kkit is configured to be used by 10,000 people for 3 months.

**WVRD (World Vision Relief and Development Inc)**—U.S. PVO Provides cash, in-kind gifts, in-kind services, and technical resources for large-scale relief/rehabilitation and development projects. Development projects include international health care, water development, food security, natural resource management, and microenterprise development.

**WSB (Wheat-Soya-Blend)**—A fortified cereal blend used for general food distribution.

**WSM (Wheat-Soya-Milk)**—A protein fortified blended dry food used for supplementary feeding

**XA (Office of External Affairs)**—Office within AID that deals with the press.

**Zulu Time**—Also known as Greenwich Mean Time (GMT). Method of synchronizing time worldwide to the time at the 0 meridian.

**Z-Score**—New standard measurement used during nutritional surveillance. “Z” represents the median. A **Z-Score** represents the standard deviation above or below the median. Children with Z-Scores of less than -2 are considered malnourished. Z-Scores of less than -3 are considered severely malnourished.

# English to Metric

**To convert            into            multiply by**

## Lengths

inches	mm	25.4
inches	cm	2.54
inches	meters	0.0254
feet	meters	0.3048
yards	km	0.9144
yards	meters	0.9144
miles	km	1.609

## Surfaces

square inches	cm <sup>2</sup>	6.452
square feet	m <sup>2</sup>	0.0929
square yards	m <sup>2</sup>	0.8361
square miles	km <sup>2</sup>	2.59
acres	hectares	0.4047

## Volumes

cubic inches	cm <sup>3</sup>	16.387
cubic inches	liters	0.016387
cubic feet	m <sup>3</sup>	0.028317
cubic feet	liters	28.317
cubic yards	m <sup>3</sup>	0.7646
liquid ounces	cm <sup>3</sup>	29.57
gallons U S A	m <sup>3</sup>	0.003785
gallons U S A	liters	3.785
teaspoons	ml	5.0
tablespoons	ml	15.0
fluid ounces	ml	30.0
cups	liters	0.24
pints	liters	0.47
quarts	liters	0.95

## Weights

grains	grams	0.0648
ounces	grams	28.35
ounces	kg	0.02835
pounds	kg	0.4536
pounds	tons (metric)	0.000454
tons (U S A )	kg	907.2
tons (U S A )	tons (metric)	0.9072
tons (long)	kg	1016.0
tons (long)	tons (metric)	1.0160

