



PACIFIC DISASTER PREPAREDNESS PROJECT

2. Post-Disaster Assessment

B. Field Survey

*by John R. Campbell
and Joseph Chung*



PACIFIC ISLANDS DEVELOPMENT PROGRAM



EAST-WEST CENTER • HONOLULU, HAWAII USA



2. POST-DISASTER ASSESSMENT

B: FIELD SURVEY

John R. Campbell and Joseph Chung
with contributions by

Joseph Barr
Emilio Bulu
David Carter
Wilfred Carter
Raymond Dionne
Lima Dotaona
John Flavell
Michael Hamnett
Freeman Hudson
John Hurrell
Ehson Johnson
Salesi Katoanga
Jeosephat La'au
Pule Mahakitau
Tevai Vaka Matapo
Eldridge Robinson
Temo Stuart

Pacific Disaster Preparedness and
Mitigation Manual Series

This series is supported in part by the Office of U.S. Foreign
Disaster Assistance of the U.S. Agency for International Development

March 1986

Library of Congress Cataloging-in-Publication Data

Campbell, John R., 1951-
Post-disaster assessment.

(Pacific disaster preparedness and mitigation manual
series ; 2)

"Products of a workshop on Post-Disaster Survey and
Assessment held at the East-West Center in 1985"—Pref.
"March 1986."

Bibliography: v. 1, p.

Contents: A. Management — B. Field survey.

1. Disaster relief—Islands of the Pacific—Management
—Handbooks, manuals, etc. I. Chung, Joseph,
1947- . II. East-West Center. III. Title.

IV. Series.

HV555.175C36 1986 363.3'48'068 86-8846

ISBN 0-86638-073-6 (v. 1)

ISBN 0-86638-075-2 (v. 2)

CONTENTS

PREFACE	vii
SECTION 1. INTRODUCTION	1
SECTION 2. PREPARATIONS FOR FIELD SURVEYS	3
SECTION 3. MEDICAL ASSISTANCE AND PUBLIC HEALTH	7
SECTION 4. WATER SUPPLY	11
SECTION 5. FOOD AND AGRICULTURE	15
SECTION 6. HOUSING AND SHELTER	23
SECTION 7. GOVERNMENT SERVICES, COMMUNICATIONS, AND TRANSPORTATION	29
SECTION 8. REPORTING	33

TABLES

1. Medical Survey, Sample Format	10
2. Water Supply Survey, Sample Format	12
3. Indicators of Damage to Crops	18
4. Agricultural Survey for Assessment of Immediate Food Needs, Sample Format	20
5. Agricultural Survey for Assessment of Rehabilitation Needs, Sample Format	21
6. Village Shelter Survey, Sample Format	24
7. Individual Dwellings/Buildings Damage Survey, Sample Format	26
8. Team Leader's Report, Sample Format	36

Preface

This manual on field survey forms part B of a two-part set devoted to the problems of post-disaster survey and assessment in Pacific island countries. The set itself is the second in a series of manuals being prepared by the Disaster Preparedness Project of the Pacific Islands Development Program for use by Pacific island government officials involved in all aspects of disaster preparedness and mitigation.¹

The two manuals that form this set are the products of a workshop on Post-Disaster Survey and Assessment held at the East-West Center in 1985, which brought together representatives of Pacific island governments, international agencies, and governments involved in providing post-disaster assistance to the region. The breakdown of this topic into two separate parts reflects the workshop's concern that two very important issues are involved—that of managing disaster information at the central or emergency headquarters level and that of actually collecting information in a post-disaster field survey.

In preparing a guide for conducting a field survey, workshop participants felt that it was not necessary to provide guidance on the topic of management. Moreover, they considered it imperative that the field manual be very brief. Thus the two-set format was adopted. While users of manual A: *Management* should be familiar with manual B: *Field Survey*, the reverse requirement is not necessary.

In preparing the set we would particularly like to thank the participants at the workshop, all of whom provided valuable material for inclusion in the manuals. These contributors are

¹The first manual in the series is *Procedures and Guidelines for Disaster Preparedness and Response*, by Air Vice-Marshal W. Carter. Subsequent manuals will cover such topics as vulnerability analysis, community awareness and training, and mitigation options for Pacific islands agriculture.

listed on the title page. PIDP would also like to take this opportunity to express its thanks to the Office of U.S. Foreign Disaster Assistance for its support not only of this particular activity but also of numerous others carried out by the Disaster Preparedness Project.

Lydia Morgan and Helen Tokushima typed the various draft manuscripts of the manuals. Barbara Yount carried out the editorial work, and Jeanne Hamasaki provided invaluable administrative support. We gratefully acknowledge the contributions of these individuals.

John R. Campbell
Joseph Chung

SECTION 1

INTRODUCTION

The purpose of this manual is to provide a basic set of guidelines regarding post-disaster field survey procedures for the Pacific region.

This manual is part B of a two-part set and is intended for use by those people who are instructed to conduct surveys of damage to, and assess the needs of, communities that have been affected by disaster.²

To enable its use in the field situation, the manual has been kept brief. Nevertheless, it provides sufficient basic information to help even an untrained person to conduct a non-technical survey.

Where necessary the manual may be considered as an addition to, and may be used in conjunction with, existing national post-disaster survey instructions.

²In comparison, manual A: *Management* of this set deals specifically with the problems faced, at the emergency management level, in identifying and managing the information requirements in a disaster situation.



SECTION 2

PREPARATIONS FOR FIELD SURVEYS

The purpose of the initial field survey is to quickly gather accurate information, which is essential if the government is to make appropriate and timely decisions regarding relief and other emergency actions.

Detailed follow-up field surveys may be conducted to gather more complete information at a later stage. This type of information usually is used to plan rehabilitation programs such as housing and agriculture.

When preparing for a field survey the following factors should be considered:

- **Where to go**
 - Assembly and departure point(s)
 - Locations to be visited and itinerary
 - Form of transportation that will be used
 - Availability of transportation
- **Time frame of survey**
 - Assembly and departure time(s)
 - Itinerary and distances to be covered
 - Degree of urgency indicated by emergency headquarters

- **Supplies to be taken**
 - Immediate first-aid requirements
 - Food and water for team members
 - Fuel supplies for the survey vehicle or ship
 - Reporting equipment and stationery (e.g., clipboards, pads, survey forms)
 - Communications equipment
 - Maps showing roads, alternative routes, and locations of population settlements
 - For surveys of isolated areas and outer islands, immediate relief supplies of food, water, and shelter may be necessary.

Careful consideration must be given to selection of survey team members, especially when limitations on transportation or accommodation reduce the numbers who can be included. For initial surveys it is important to include, if available,

- **A doctor or medical officer**
- **An agricultural officer**
- Persons who may be able to assist with recording, communications, etc.
- Preferably the medical, agricultural, and other personnel will have had **previous experience** of post-disaster survey and/or **local knowledge** of the survey area.

Survey teams must have a **clear set of instructions** from emergency headquarters to ensure that the desired information needs are met.

The main objectives of field surveys are to collect information on

- **Medical Assistance and Public Health**
- **Water Supply**
- **Food and Agriculture**
- **Housing and Shelter**
- **Government Services, Communications, and Transportation**

Initial surveys may also discover the need for undertaking an urgent **search and rescue** mission or for conducting an **evacuation**. In such cases it is vital that this information is sent as soon as possible to emergency headquarters.



SECTION 3

MEDICAL ASSISTANCE AND PUBLIC HEALTH

The main purposes of post-disaster health and medical surveys are to

- Discover the **number of casualties**;
- Assess the **medical and health needs** of affected communities.

It is important that medical surveys be **accurate**. For this reason all survey teams should include, if possible, at least one person with medical training, preferably a doctor.

Sources of information should be stated if direct observation is not possible. This is particularly important when a doctor is not present or when reports are made of possible casualties or diseases outside the survey area.

Initial survey teams should not slow down their task by providing major first aid or other help to people in devastated areas.

- The main task of the team is to give a full and accurate report to emergency headquarters so that it can decide where help is most needed.
- If major medical assistance is needed, either it should be requested or the team should return when the survey is

finished and those who need the most help have been identified.

- However, when a survey team is sent to an isolated place where other assistance cannot be expected, the survey team may have to provide all urgent help required.

Listing of casualties is a key role of the survey team.

- A doctor or nurse may be able to examine the casualties and decide upon priorities for treatment.
- However, non-medical personnel should report only what they see and what they are told by the patient.

Categories of casualties are

- **Dead** (bodies counted and identified);
- **Missing** (whereabouts unknown);
- **Injured** (e.g., broken limbs, cuts, bleeding);
- **Sick** (e.g., fever, diarrhea, vomiting).

The survey team should report on the state of medical services and include the following:

- The condition of **medical and health facilities**, including number of beds available;
- Number and type of medical **personnel**;
- Condition of **equipment**;
- Amount of **supplies**, including drugs either lost or remaining;
- Availability of medical **transportation**.

The team should also **assess medical needs** such as

- Facilities
- Personnel
- Equipment
- Supplies
- Drugs
- Transportation

The survey team also should report any disease risk factors that it sees, including

- The condition of **toilets**;
- An increase in **insect, rat, or other pest** populations;
- **Other risks**, such as
 - Stagnant water,
 - Poor drainage,
 - Poor hygiene conditions,
 - Substandard kitchens,
 - Overcrowding.

The problems of water supply are covered in Section 4.

Disposal of bodies not only is a medical problem but also, if not done properly, can result in health, legal, and cultural problems. Survey teams should answer the following questions:

- **Human bodies**
 - What is being done to dispose of bodies?
 - Have all bodies been identified?
 - Have death certificates been issued, if necessary, or have other legal requirements been met?
 - Are there any problems reported concerning bodies?
 - Is any help required with the disposal of bodies?
- **Animal bodies**
 - Are there animal bodies in the area?
 - What is being done to dispose of these?
 - Is any help needed?

Table 1 is a sample format for medical assistance and public health needs assessment.

TABLE 1 Medical Survey, Sample Format

Village/Settlement _____	Date _____
Island/District _____	
Population: Adults (over 15 years)* _____	
Children (5 to 15 years) _____	
Infants (below 5 years) _____	
Number Dead _____	
Missing _____	
Injured _____	
Sick _____	
<i>Medical Facilities</i>	<i>Medical Supplies:</i>
(circle appropriate answer):	Lost _____
Clinic/Hospital/No Facility _____	Remaining _____
Destroyed/Damaged but _____	Needed _____
Usable/Undamaged _____	
Beds Undamaged _____	
Beds Occupied _____	<i>Medical Personnel (by number):</i>
Beds Available _____	Doctors Available _____
	Nurses Available _____
<i>Disease Risk Factors:</i>	<i>Other Risks:</i>
Toilets:	Stagnant Water _____
Destroyed _____	Poor Drainage _____
Damaged _____	Poor Hygiene Conditions _____
Serviceable _____	Substandard Kitchens _____
Is there any problem with the	Overcrowding _____
disposal of sewage _____	Insect/Rat Infestation _____
	Is Spraying Necessary _____
Remarks: _____	
Name of Surveyor _____	

*The ages given here are intended only as a guide. In some countries a different age breakdown is used to distinguish adults from children and children from infants.

SECTION 4

WATER SUPPLY

The purpose of a post-disaster water supply survey is to **examine the availability of safe water** for drinking and other uses and to assess the need to supplement these supplies when they are not adequate.

Survey team members should be aware that final assessment of the contamination of water can be done only in a laboratory by trained personnel.

- Sterile containers for water samples should form part of the equipment of any survey team required to examine water supplies.

As indicated in Table 2, survey teams should assess

- **Population** affected by low or contaminated supply.
- **Supply.**
 - Usual sources;
 - Present availability;
 - Causes of problems in supply, such as
 - Wells dry
 - Streams stopped flowing
 - Pipe breaks
 - Dams empty

TABLE 2 Water Supply Survey, Sample Format*

Village/Settlement _____ Date ____/____/____
 Island/District _____

Total Population _____

Source of Supply

(Indicate as appropriate):

Mains to house _____

Mains to village/street tap _____

Communal Wells _____

Individual Wells _____

River/Stream _____

Roof Catchment _____

Means of Storage

(Indicate as appropriate):

Underground Reservoir _____

Surface Level Reservoir _____

Overhead Tank _____

<i>Disaster Impact</i>	<i>Drinking</i>	<i>Household</i>	<i>Agriculture</i>	<i>Industrial</i>
	<i>(Indicate as appropriate)</i>			
Supply Not Affected				
Supply Reduced But Adequate				
Supply Inadequate				
No Supply Available				
Supply Contaminated				
Supply Suspected of Contamination				
Supply Unaffected By Contamination				

Estimated Water Supply Needs:

Quantity _____

Duration _____

Description of damage to supply, storage, and/or distribution system:

Name of Surveyor _____

*This table is intended as a guide to the wide range of considerations necessary when water supply is assessed. It should be noted that many of the categories listed in the table are not likely to be appropriate in rural areas, and surveyors may alter their own formats accordingly.

- Tanks damaged/silted up
- Roof catchments destroyed
- Indicate assistance required to solve these problems.
- **Contamination.**
 - If contamination is suspected, the possible causes or indicators should be outlined, such as
 - Human or animal bodies in the water
 - Sewage overflows nearby
 - Discoloration of the water
 - Saltiness of the water
 - Diarrhea or other illness in the population

*The team should also **assess water needs**, including*

- Whether or not water is needed;
- The purpose for which it is required:
 - Drinking
 - Other household uses
 - Agriculture
 - Industrial
- Quantity needed;
- How often it will be needed;
- Additional water storage facilities needed.



SECTION 5

FOOD AND AGRICULTURE

The purpose of a post-disaster food and agriculture survey is to gather information that will be used to determine

- Food relief needs
- Agricultural rehabilitation plans

In **initial surveys** the main concern is to identify immediate food needs. When evaluating food availability it is important to remember that

- Some crops (e.g., mature yams) will remain edible for some time, if there is no waterlogging;
- Many other maturing and mature crops can be salvaged by immediate harvesting;
- Harvested crops, if not too badly damaged, may keep for up to two weeks or more under natural conditions or be preserved by traditional or other known methods.

An assessment of **immediate food needs** also should consider non-agricultural sources of food such as

- Wild food resources;
- Fisheries, other marine resources, and fishing equipment;
- Commercial and other stores of food;
- Employment.

Evaluation of damage to crops is extremely difficult. Table 3 outlines the main **indicators of damage** for the major Pacific crops.

- In assessing damage to root crops, it is particularly important to inspect the tubers and corms of one or two plants of each affected variety irrespective of above-ground damage.
- Livestock losses should also be recorded, including information on the numbers and types of animals lost.

Methods for describing damage should be standardized. Losses may be described in terms of

- Numbers of plants or mounds destroyed;
- Areas of crops destroyed;
- Losses expressed as a percentage of total.

While percentage figures are only general, they are probably the best because the accurate estimate of areas is extremely difficult and because counting each individual plant destroyed is too time consuming. Whatever method is chosen, it should be used consistently throughout the entire survey.

Because of time limitations and the scattered nature of Pacific islands agriculture, the surveyor may have to make an assessment from only a limited sample. **As many gardens as possible** should be examined so that realistic assessments can be made.

Table 4 is a sample format for assessing immediate food needs. Often agricultural officers who participate in field surveys are required to prepare their own survey reports for their departments, and it is suggested that the format shown here could be used as a basis for the preparation of a final report.

Long-term feeding programs and agricultural rehabilitation planning are usually based on **detailed follow-up surveys**, which are normally conducted about two weeks after the disaster. These surveys are usually the responsibility of agriculture departments.

When conducting a detailed survey it is important to provide the following information:

- Detailed description of damage to both food and cash crops (crop by crop);
- Detailed summary of livestock losses;
- Estimate of quick maturing planting materials needed;
- Estimate of inputs required for long-term rehabilitation, including
 - seeds/planting materials;
 - fertilizers and pesticides;
 - animal feed;
 - materials to repair/replace farm property (e.g., copra drier, fencing);
- List of additional requirements such as land clearing equipment.

Table 5 shows a sample format for assessing agricultural rehabilitation needs.

TABLE 3 Indicators of Damage to Crops¹

CROPS	Cyclones/Hurricanes					Flooding			Drought	
	Uprooted	Defoliation	Leaves Shredded	Saltwater Spray	Lodged	Saltwater Inundation	Water-logged	Lodged	Silted	Wilting
Taro—Immature	x	o	o	o	o	x	o	o	o	x
Taro—Mature	•	o	o	o	o	•	•	•	•	•
Sweet Potatoes	•	o	o	o	—	•	•	•	•	•
Yams—Immature	x	o	o	o	o	x	x	x	x	x
Yams—Mature	•	o	o	o	o	•	•	•	•	•
Cassava—Immature	x	o	o	o	o	x	x	o	x	x
Cassava—Mature	x	•	•	o	•	•	•	•	•	•
Sago Palm	x	o	o	o	x	o	o	x	o	o
Coconut	x	o	o	o	x	—	o	x	o	o
Cocoa	x	o	o	o	o	x	o	x	o	o
Citrus	x	o	o	o	o	x	o	o	o	o
Mango	x	o	o	o	x	o	o	x	o	o
Coffee	x	o	o	o	x	x	o	x	o	o
Breadfruit	o	o	o	o	o	o	o	o	—	o
Bananas	x	o	o	o	x	x	o	x	o	o
Pawpaw	x	o	o	o	x	x	x	x	o	x
Rice—Wetland	x	o	o	o	o	x	o	o	o	x
Rice—Dryland	x	o	o	o	o	x	o	o	o	x
Assorted Vegetables	x	x	x	x	o	x	x	x	o	x
Sugarcane	x	o	o	o	o	x	o	x	o	o

Pineapple	x	o	o	o	o	x	o	o	o	o
Passionfruit	x	o	o	x	o	x	x	o	o	o
Kava	•	•	o	o	o	•	•	•	o	o
Ginger	x	o	o	x	o	x	x	o	o	o
Vanilla	o	o	o	o	o	o	o	o	o	o
Maize	x	x	o	x	o	x	o	o	o	o

Note 1: The seriousness of the damage depends on the severity of the event. Indicated here are the possible effects of a severe event. Other natural occurrences such as earthquakes and volcanic eruptions with their accompanying landslide, tsunami, ashfall, lava flow, etc., often result in destruction to crops.

- Keys:
- x = *Destroyed*. Crops will not survive and have to be replaced or replanted. Damage incurred renders the crops useless for consumption or for sale.
 - = *Destroyed but salvageable*. The crop has matured, and although it will not recover, it can be salvaged for consumption or for sale, or be stored or preserved if immediately harvested or gathered following the event.
 - o = *Partly Damaged*. The crops are damaged but will recover. In most cases, crops require some inputs such as fertilizer, removal of debris, pruning, propping, etc., to ensure full recovery.
 - = *Not Applicable*. The indicators of damage do not apply due to the characteristics of the crops. The crops may not be too badly affected.

TABLE 4 Agricultural Survey for Assessment of Immediate Food Needs, Sample Format

Village/Settlement _____		Date _____		
Island/District _____				
Damage to crops:				
		Percentage		
<i>Crops</i>	<i>Area</i>	<i>Destroyed (Unsalvageable)</i>	<i>Damaged (Salvageable)</i>	<i>Undamaged</i>
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
Livestock Losses:				
<i>Livestock Type</i>	<i>Dead</i>	<i>Missing</i>	<i>Remaining</i>	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Non-agricultural Food Resources (Seafood, etc.):				

Recommendations and Comments:				

Name of Surveyor _____				

TABLE 5 Agricultural Survey for Assessment of Rehabilitation Needs,
Sample Format

Village _____ Date ____/____/____
Island/District _____

(a) Crop Damage:

<i>Crop</i>	<i>Area</i>	<i>Percentage</i>			<i>Estimated Cost of Losses</i>
		<i>Destroyed</i>	<i>Damaged but will Recover</i>	<i>Undamaged</i>	
1. _____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____	_____

Comments on Expected Recovery and Harvest Period and Relief Needs:

(b) Crop Rehabilitation Requirements:

<i>Inputs Required</i>	<i>Quantity</i>	<i>Estimated Cost</i>
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____

Comments:

TABLE 5 (continued)

(c) Livestock Losses:

<i>Items</i>	<i>No. Lost</i>	<i>No. Remaining</i>	<i>Estimated Cost of Losses</i>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

Comments: _____

(d) Damage to Farm Properties (e.g., copra driers, pigsties):

<i>Items</i>	<i>No. Lost</i>	<i>No. Remaining</i>	<i>Estimated Cost of Losses</i>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

Comments: _____

(e) Assessment of Fisheries, Fishing Equipment, and other Marine Resources:

(f) Additional Requirements (e.g., chainsaws, heavy clearing equipment):

(g) General Recommendations:

Name of Surveyor _____

SECTION 6

HOUSING AND SHELTER

The purpose of a housing and shelter needs assessment is to determine immediate shelter requirements and to anticipate longer-term rehabilitation and reconstruction needs.

Information obtained from an initial survey of **immediate shelter needs** usually is used to organize a rapid response, if required, and need not be very detailed. Specific information that should be collected includes

- The name or location of the village or community;
- Number of people in need of shelter;
- The extent of damage or destruction of houses;
- Other dangers that may be facing the community;
- The type and amount of shelter presently available.

A sample village shelter survey format is given in Table 6.

Even in initial surveys governments may want to gather detailed information to determine **long-term rehabilitation or reconstruction needs** although this information is usually collected in a detailed follow-up survey. The basic requirements for a detailed household damage assessment are

- Location of the house (usually name of village it is in);
- Name and occupation of the head of household;

TABLE 6 Village Shelter Survey, Sample Format

Village/Settlement _____ Date ____|____|____

Island/District _____

Total Population _____

Population Left Without Shelter _____

	<i>House Built of:</i>		
	<i>Bush Materials</i>	<i>Permanent Materials</i>	<i>Total</i>
Destroyed	_____	_____	_____
Damaged/Usable	_____	_____	_____
Damaged/Unusable	_____	_____	_____
Undamaged	_____	_____	_____

Other Threats to Settlement: Landslide _____

Flooding _____

Coastal Erosion _____

Other (Specify) _____

Other Shelter Available: Yes _____ Where _____

No _____

Name of Surveyor _____

- Number of people living in the house;
- Housing materials;
- Present condition of house (is it usable?);
- Extent of damage (e.g., destroyed, damaged/unusable, damaged/usable, undamaged);
- Alternative sources of shelter;
- Damage to other structures (e.g., kitchens, toilets);
- Insurance status of the house;
- Ownership or lease arrangements of house and land;
- Safety of the land.

In describing damage to homes, **consistency is essential**. It is therefore necessary to have a straightforward classification of degrees of damage. The categories most commonly used are

- **Destroyed.** This refers to those houses that cannot be lived in and **need to be replaced**. Destroyed buildings may be
 - Completely missing (blown/washed away, buried, etc.);
 - Completely destroyed although materials are still on site.
- **Damaged.** This refers to those houses that **need to be repaired** rather than totally replaced. The two categories of damaged homes are
 - Damaged and cannot be lived in;
 - Damaged, but can be lived in.
- **Undamaged.** This refers to homes that need only minor repairs or that received no damage at all.

The type of survey form to be used will vary from country to country depending on local conditions, housing styles, and national requirements. Table 7 is a sample format for a detailed post-disaster housing survey.

Surveyors are often required to assess damage to other buildings such as government or community property. In particular, information is needed on the state of schools. To fulfill these re-

**TABLE 7 Individual Dwellings/Buildings Damage Survey,
Sample Format**

Village/Settlement _____ Date _____
 Island/District _____

Head of Household _____
 Occupation of Head _____
 Number of Persons in Household _____

Description of Dwelling/Building:

Roofing: Thatch _____
 Iron _____
 Other _____ Describe _____

Walls: Bamboo _____
 Reeds _____
 Sawn Timber _____
 Masonite _____
 Iron _____
 Concrete Block _____
 Other _____ Describe _____

Description of Damage:

Destroyed _____
 Damaged/Unusable _____
 Damaged/Usable _____

Alternative Shelter Available _____

Damage to Outhouses and Other Structures:

Toilets: Flush _____
 Waterseal _____
 Pit _____

Watertanks _____
 Kitchens _____

House Insured: Yes _____ No _____

House is: Owned _____ Land is: Owned _____
 Leased _____ Leased _____

Condition of Land: Safe _____ Unsafe _____

Name of Surveyor: _____

quirements the assessment of school buildings should follow a pattern similar to that of housing:

- Destroyed
- Damaged and cannot be used for school purposes
- Damaged but can be used for school purposes
- Undamaged

It is also important to include information on the type of buildings (e.g., traditional, modern) and, where relevant, on the condition of teachers' quarters.



SECTION 7

GOVERNMENT SERVICES, COMMUNICATIONS, AND TRANSPORTATION

The immediate purpose of post-disaster assessment of communications and transportation is to ascertain the state of communications and access between affected areas, emergency headquarters, and sources of relief.

Information on damage, destruction, and disruption of government infrastructure, communications, and transportation linkages is also necessary for planning the restoration of normal conditions.

Post-disaster survey teams should assess the following:

- **Government infrastructure**
 - Who is in charge? (usually at district or provincial level)
 - Is assistance needed?
- **Communications**
 - Is communication between affected areas, emergency headquarters, and sources of relief satisfactory?
 - Is re-instatement of normal systems proceeding?
 - Is assistance required?
 - Are public broadcasts being received?

- **Roads and bridges**
 - Are the essential access roads open?
 - Specify which ones.
 - What is causing the blockage?
 - To what type of vehicle?
 - What other important roads are blocked?
 - Specify where.
 - What is causing the blockage?
 - How long will it take to open for use?
 - What extra assistance is required?
- **Airstrips and helicopter landing sites (helipads)**
 - Is the airstrip functioning?
 - Are there any problems?
 - If applicable, is there a suitable area for a helipad?
 - Is an airdrop practicable?
 - If so, where and how will the drop area be marked?
- **Wharves and waterways**
 - Can supplies be landed by boat?
 - Any particular problems?
 - Can waterways be used for access?
- **Electricity**
 - Is generating system working?
 - Are there dangers from broken power lines?
 - Is the restoration of the power distribution system proceeding?
 - What assistance is required?
- **Transportation**
 - What transportation is available?
 - Is it sufficient for needs?
 - What types of fuel are available?
 - Where?
 - In what quantities?

- **Public facilities and morale**

- What is the general state of public morale?
- Are schools able to function/what percentage are damaged?
- Are churches serving as rallying points?
- Are community welfare organizations working?
- What assistance do they require?
- What other public facilities are available?
- What other public facilities are damaged?
- General comments.



SECTION 8

REPORTING

Thus far this manual has concentrated on how to **collect** post-disaster information. It now addresses the problem of making this information available to headquarters.

Reporting usually involves two main parts:

- Regular daily contact with emergency headquarters;
- Detailed final report by team leader upon completion of survey.

In all cases reporting should be

- **Concise** (to the point);
- **Clear** (unconfusing);
- **Relevant** (responding to terms of reference or set of instructions);
- **Consistent** (containing the same type of information for all places).

Regular daily contact with emergency headquarters is most commonly carried out by radio or telephone.

- It is therefore important that persons with communications experience are included in the survey team to ensure that regular daily contacts can be maintained.

- Information passed on at this level must be brief, and it is usually restricted to urgent matters and concise summaries of information for use at emergency headquarters.
- It is important to maintain daily contacts because emergency headquarters also may have important information or instructions for the survey team.

In most cases the reporting will be the responsibility of the team leader although specialist reports may be made by individual team members (e.g., agriculture, health).

At the completion of the survey, the team leader usually submits a detailed report to emergency headquarters presenting, in summarized form, the information gathered by the team.

A typical team leader's report should include

- Heading;
- Date of survey;
- Composition of survey team;
- Itinerary of survey trip;
- Summary of damage/destruction by island or district. This should include:
 - An indication of island or district population;
 - Summary of health situation including deaths and status of injured;
 - Summary of housing, school, and agricultural surveys (usually with summary tables showing damage at village or settlement level);
 - Summary of damage to government services, roads, transportation facilities, and communications;
 - Items of specific interest such as the nature of community's own response or absence of it or other unusual circumstances;
 - Status of relief and medical assistance given;
 - Discussion of general situation and outlook;
 - Overall summary of situation in area surveyed;
 - Outline of problems (if any) experienced in survey.

Table 8 is a sample format that may be used in preparing a team leader's report.

Team members usually prepare specialized reports (e.g., health, water supply, agriculture, housing) for submission to specialists at emergency headquarters or for use within the relevant government departments. In these cases the reports should follow the formats adopted in the collection of information.

TABLE 8 Team Leader's Report, Sample Format

Nature or Name of Disaster: _____

List of Team Members: _____

Itinerary: _____

Summary of Damage for Each Island or District:

(a) Population and Health:

	<i>Village Names</i>					<i>Total</i>
	<i>Village 1</i>	<i>Village 2</i>	<i>Village 3</i>	<i>Village 4</i>	<i>etc.</i>	
Households	_____	_____	_____	_____	_____	_____
Deaths	_____	_____	_____	_____	_____	_____
Missing	_____	_____	_____	_____	_____	_____
Injured	_____	_____	_____	_____	_____	_____
Sick	_____	_____	_____	_____	_____	_____
Adults (over 15 years)	_____	_____	_____	_____	_____	_____
Children (5-15 years)	_____	_____	_____	_____	_____	_____
Infants (below 5 years)	_____	_____	_____	_____	_____	_____
Total Popn.:	_____	_____	_____	_____	_____	_____

State of:

Medical Facilities _____

Medical Personnel _____

Disease Risk Factors _____

General Comments _____

TABLE 8 (continued)

(b) Water Supply:

Normal Sources of Supply and Storage _____

Impacts of Disaster _____

Estimated Water Supply Needs:

	<i>Village 1</i>	<i>Village 2</i>	<i>Village 3</i>	<i>Village 4</i>	<i>etc.</i>	<i>Total</i>
Quantity	_____	_____	_____	_____	_____	_____
Duration	_____	_____	_____	_____	_____	_____

General Comments _____

(c) Agriculture and Food:

Percentage Crop Losses

<i>Crop</i>	<i>Village 1</i>	<i>Village 2</i>	<i>Village 3</i>	<i>Village 4</i>	<i>etc.</i>	<i>Total</i>
Taro	_____	_____	_____	_____	_____	_____
Yams	_____	_____	_____	_____	_____	_____
Cassava	_____	_____	_____	_____	_____	_____
Sweet Potato	_____	_____	_____	_____	_____	_____
Breadfruit	_____	_____	_____	_____	_____	_____
Coconuts	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Livestock Dead or Missing

<i>Livestock</i>	<i>Village 1</i>	<i>Village 2</i>	<i>Village 3</i>	<i>Village 4</i>	<i>etc.</i>	<i>Total</i>
Pigs	_____	_____	_____	_____	_____	_____
Cattle	_____	_____	_____	_____	_____	_____
Goats	_____	_____	_____	_____	_____	_____
Chickens	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

General Comments: _____

TABLE 8 (continued)**(d) Housing:**

	<i>Village 1</i>	<i>Village 2</i>	<i>Village 3</i>	<i>Village 4</i>	<i>etc.</i>	<i>Total</i>
Population left without shelter						
Destroyed						
Damaged (Unusable)						
Damaged (Usable)						
Undamaged						

Schools:

Classrooms _____

Teachers' Quarters _____

General Comments (other threats to settlement, other shelter available, etc.) _____

(e) Government Services:

Communications: _____

Roads and Bridges: _____

Airfields: _____

Wharves and Waterways: _____

Electricity: _____

Transportation (types of transportation and fuel availability): _____

Other: _____

TABLE 8 (continued)

(f) Actions Taken and Assistance Given: _____

(g) General Conclusions: _____

THE EAST-WEST CENTER is a public, nonprofit educational institution with an international board of governors. Some 2,000 research fellows, graduate students, and professionals in business and government each year work with the Center's international staff in cooperative study, training, and research. They examine major issues related to population, resources and development, the environment, culture, and communication in Asia, the Pacific, and the United States. The Center was established in 1960 by the United States Congress, which provides principal funding. Support also comes from more than 20 Asian and Pacific governments, as well as private agencies and corporations.

PACIFIC ISLANDS DEVELOPMENT PROGRAM

The Pacific Islands Development Program (PIDP) at the East-West Center helps meet the special development needs of the Pacific islands through cooperative research, education, and training. Its quality in-depth research provides island leaders with information on alternative strategies to reach development goals and meet the needs of the island peoples.

PIDP serves as the secretariat for the Pacific Islands Conference, a heads of government organization, and for the Standing Committee, composed of eight island leaders. PIDP's projects—requested and reviewed by the Standing Committee—respond to the development themes discussed at the First (1980) and Second (1985) Pacific Islands Conference. This process is unique within the East-West Center and in other research and educational organizations serving the Pacific.

Since 1980 PIDP has conducted research and training in nine areas: appropriate government systems, aquaculture, disaster preparedness and rehabilitation, energy, faculty development, indigenous business development, nuclear waste disposal, regional cooperation, and roles of multinational corporations in the Pacific tuna industry.

At its Tenth Meeting in January 1986, the Standing Committee endorsed a set of new projects for PIDP. These are health and nutrition, roles of multinational corporations—petroleum marketing and supply, Pacific youth, policy analysis, role of the private sector in Pacific development, and urban and rural life.