

## PART 1

# PLANNING FOR DISASTER PREPAREDNESS

*In this part of the module you will learn.*

- *three objectives of vulnerability assessments*
- *the typical structure of a disaster plan*
- *how to recognize:*
  - *four obvious planning points*
  - *four less obvious planning points*
  - *eight categories of preparedness planning: the plan, the institutional framework, information systems, the resource base, warning systems, response mechanisms, education/training, and rehearsals*

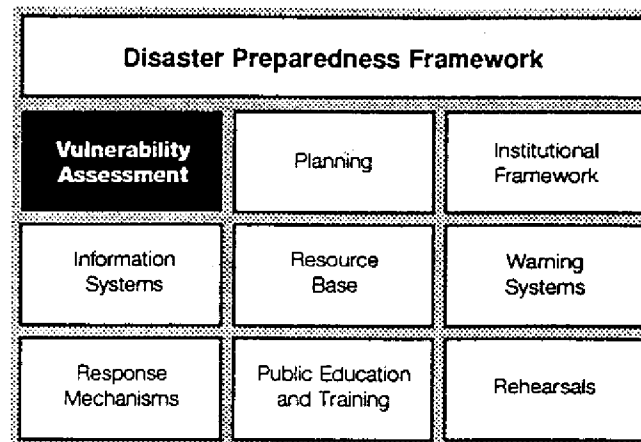
Part One should give you an understanding of the major components involved in disaster preparedness and provide a basis upon which a national disaster preparedness strategy can be developed. The disaster preparedness framework illustrated on the following pages outlines activities that are essential to the development of a preparedness strategy. Although a sequence of implementing these activities is suggested, some of the activities may be undertaken simultaneously, or even in a totally reverse order.

**Q.** *In your country, which activities have already been undertaken to promote disaster preparedness?*

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## Vulnerability assessment



In most instances, you can identify particular geographical areas or communities that are predictably under threat from a hazard. These may include traditionally drought-prone areas, or communities living near volcanos or in flood-prone areas. They could be squatter settlements in which housing structures are known to be vulnerable to hurricanes, or communities unprotected from industrial waste. However, vulnerability need not be tied to particular geographic locations or static communities. Displaced people, forced to flee from conflict or collapsing economic conditions, represent a community of sorts that can fall within the purview of vulnerability assessments. Developing and compiling vulnerability assessments is one way of approaching a systematic means of establishing an essential disaster management tool.

Vulnerability analysis is a continuing, dynamic process of people and organizations assessing the hazards and risks they face and determining what they wish to do about them, if anything. Vulnerability assessment also includes a means of structured data collection geared towards understanding the levels of potential threats, needs and immediately available resources. Assessment includes two general categories of information. One category is relatively static infrastructure information that provides bases for determining the extent of development, types of physical advantages and disadvantages faced by communities residing in an area, and a "map" of available structures (such as roads and hospitals) that might be useful in times of emergencies. The other category includes relatively dynamic socioeconomic data indicating causes and levels of vulnerability, demographic shifts and types of economic activity.

There is nothing mysterious about the concept of vulnerability assessments. Their initial objective is to establish a data base that focuses upon the likely effects of potential hazards, relief needs and available resources. Vulnerability assessments should be linked with development interventions. When communities are determined to be vulnerable, development assistance may obviate the need for emergency assistance.

*ANSWER (from page 9)*

Answers may include measures taken related to any of the nine categories set forth in the Disaster Preparedness Framework.

<sup>1</sup> See also the UNDP/UNDRO Disaster Management Training Programme module, Vulnerability and Risk Assessment.

There are three main reasons why assessing vulnerability is critical for disaster preparedness. First, accurate vulnerability assessments serve as a means to inform decision-makers about the utility of national and local level approaches to disaster preparedness.

Second, decision-makers are usually aware of disaster propensities within their own countries. However, until the dimensions of the disaster threat and levels of preparedness or unpreparedness are fully appreciated, there may not be an effective starting point upon which to construct an overall plan.

Third, vulnerability assessments should serve as the basis for a more continuous "habit" of monitoring trends in physical, socioeconomic and infrastructure conditions of disaster-prone countries. In that sense, the initial effort of developing a data base through vulnerability assessments should become the basis for maintaining and updating an essential informational tool for development planning purposes.

On a technical level, vulnerability assessments serve as the starting point for determining the types of plans that should be developed as part of a national disaster preparedness strategy. For example, it is useful to know that people living on the deltaic coastline of Bangladesh are vulnerable to tropical storms. However, such information is of little use unless you also know the seasonal migration patterns of these people, whether or not those who till the land normally bring their families to the delta, and the number of two-story buildings in the area

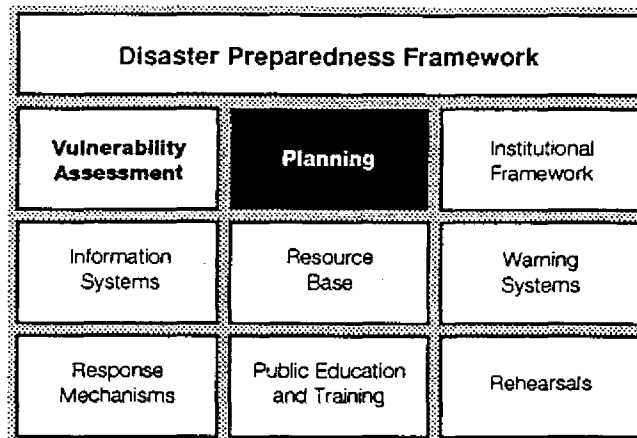
*Vulnerability assessments should serve as the basis for a more continuous "habit" of monitoring trends in physical, socioeconomic and infrastructure conditions of disaster-prone countries.*

**Q.** *Why should vulnerability assessments serve as the basis for a more continuous "habit" of monitoring trends in physical, socioeconomic and infrastructure conditions of disaster-prone countries?*

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## Planning



Planning is the theme of the whole disaster preparedness exercise. One objective is to have agreed-upon, implementable plans in place, for which commitment and resources are relatively assured. Planning for readiness includes working out agreements between people or agencies as to who will provide services in an emergency to ensure an effective, coordinated response. These agreements might take various forms: memos of understanding, mutual aid agreements, or individual agency and master plans. The ultimate objective is not to write a plan but to stimulate on-going interactions between parties which may result in written, usable agreements. The written plan is a product, but not the main goal, of the planning process. There are four obvious points to be considered in any planning effort.

### A plan must:

- have a clearly stated objective or set of objectives
- reflect a systematic sequence of activities in a logical and clear manner
- assign specific tasks and responsibilities
- integrate its activities, tasks and responsibilities to enable the overall objective or set of objectives to be achieved

Four other aspects of planning should also be considered.

### Clarity

Is this a "national disaster preparedness strategy" or a "contingency plan?" National disaster preparedness strategies include broad exercises which review the structure of all relevant institutions and their response capacities. This review includes central and local levels of government in an attempt to prepare for disasters in the context of the "disaster continuum." (See Figure 1). It incorporates disaster preparedness within all disaster phases as well as within development programs. Such strategies normally include disaster mitigation, preparedness, recovery and rehabilitation.

### ANSWER (from page 11)

Because information-gathering for disaster preparedness is a dynamic, on-going process.

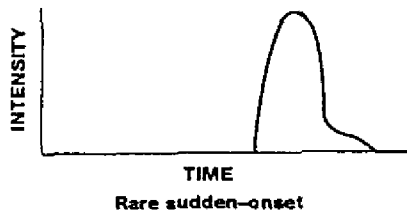
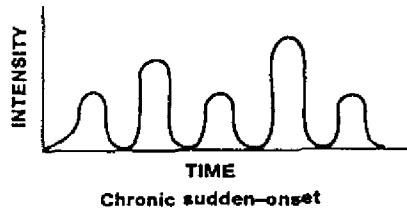
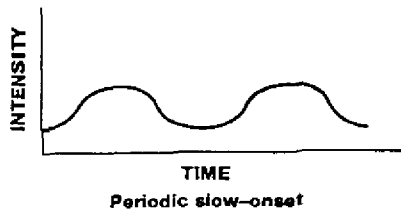
## Typical Structure of a Disaster Plan

Introduction .....	Legislative Authority Related Documents
The Aim, Definitions and abbreviations, The country (region, state) .....	Topography Climate Demography Industry Government Organization
The threat .....	History Natural events (by type) Industrial accidents (by type)
Command and coordination .....	Powers and responsibilities at each level Command authorities and posts Description and role of Emergency Service
Planning groups .....	Arrangements for sectoral planning (such as Medical, Transport, and Communications)
External assistance .....	Arrangements and authority for requesting assistance from outside the planning area
Emergency operations centers Activation of organizations .....	Warning Systems Receipt and Dissemination of Warnings
Operational information Counter disaster organizations .....	Government Departments Defense Ministry Local Government Voluntary Organizations Arrangements for Liaison
Administration, Financial procedures, Supply .....	Emergency Purchasing Procedures Powers for Requisitioning
Public information .....	Announcements (requiring action) Information releases Emergency Broadcasting Multi-language broadcasts
Sub-plans .....	Communications, Police, Fire Services, Medical, Rescue, Welfare, Housing, Public Works, Transport, Power, Registration and Tracing Service

**FIGURE 1**

*Typical structure of a disaster plan*

## Disaster Preparedness



Disaster contingency plans normally focus on means to address particular hazards. This is not to say that a good contingency plan ignores the need for mitigation and recovery measures, but it usually is not concerned with the entire disaster continuum, such as rehabilitation and development linkages. The main focus is on ways to address a particular hazard (such as a flood), within a fairly finite period, such as from early warning and response to immediate recovery phases. An effective national strategy will usually generate various contingency plans to meet specific disaster conditions.

Disasters strike in different ways and at different times. For example, certain countries have to face persistent, slow-onset disasters that occur almost on an annual basis during a three to five year cycle, affecting substantial portions of a society, such as drought-related famines in the Horn of Africa. Other countries face chronic sudden-onset threats. For example, floods in Bangladesh may normally affect a predictable part of the population in a geographically well-defined area. There are other nations, including Mexico, which may suffer severely from natural disasters which are relatively rare in occurrence, spread out over much longer intervals.

The answer to what types of plans or strategies are needed obviously depends on these and other variables. To what extent will a government of a disaster-prone country wish to commit national resources or external aid to this extensive an undertaking? From a structural and institutional point of view, would it be better to introduce a disaster preparedness plan on an incremental basis? For example, the plan might deal with one type of prevalent problem such as drought, or with all types of emergencies in a particularly vulnerable area.

**Q.** Explain the difference between a disaster preparedness plan and a strategy.

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### *Participation in the process*

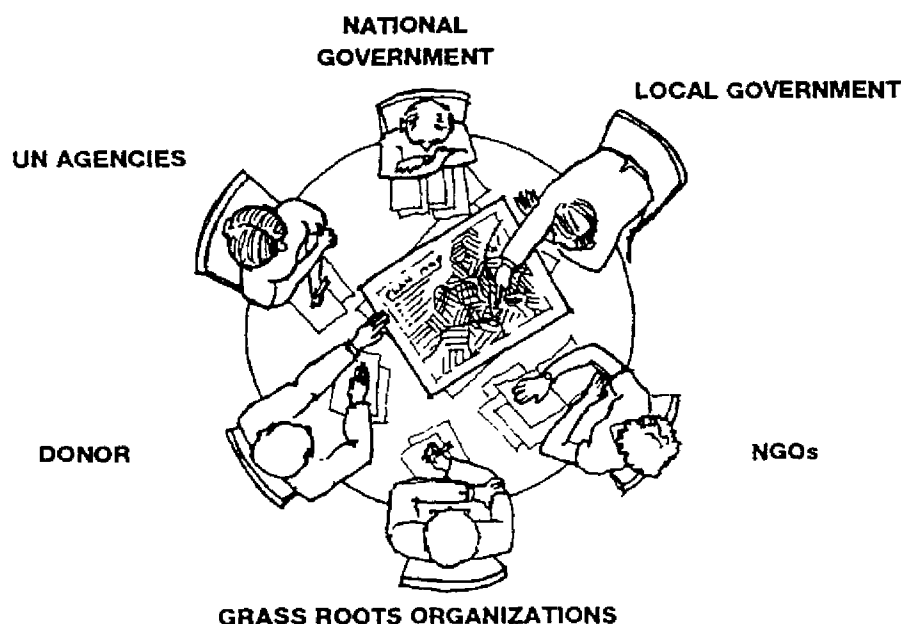
Of course, you can assume that the plan is designed for those most vulnerable to hazards. Determining who the plan is for reveals two standard planning dilemmas. The first involves determining who should be incorporated into the planning process. Experts often insist that local people and grass-roots organizations should participate in the planning process. This advice is justifiable for anyone who has seen the effectiveness of local coping mechanisms in urban or rural communities. However, how best to do this often requires considerable institutional dexterity. Local participation can not only present a considerable logistical problem, but government officials may not be receptive to the input.

The second point is the extent of centralization or decentralization, not only in the planning process but in the plan itself. For example, to what extent will regional or local institutions be allowed to declare an emergency or be allowed to release essential food or non-food items from prepositioned stores? What institutional relationships will exist between local, regional and central authorities? Who will undertake assessments, who will determine needs, and who will "own" the information?

### *The planners*

In the enthusiasm and commitment to develop a plan, international experts and institutions are frequently tempted to lead the planning process. This is a fundamental error. If this is done, it will result in a mound of paper that benefits few. The complexities for government of introducing such a plan might be considerable. Progress might be commensurately slow. The best leadership role for international experts is that of gently pushing the process from the back ranks.

Planning might best be seen as the coordination of the intentions and plans of each collaborating party. Planning is not simply the work of "experts." Rather, it includes such aspects as challenging shoe factory managers to decide how to protect and respond to threats to their employees and facilities; or asking farmers how they intend to protect their seedlings or animals.



*ANSWER (from page 14)*

Plans focus on the means to address particular disaster threats, while strategies include broad exercises which review the structure of relevant institutions and their response capacities

#### DISASTER FOCAL POINT

In all UNDP field offices in disaster-prone countries, a senior national officer is designated this title for all disaster-related matters, including mitigation, response and international UN/UNDP preparedness.

However, to identify central planners, define which ministries and agencies in the government might be directly or even indirectly involved in some aspect of the proposed plan. Do not assume that if a government structure has a designated disaster focal point, the field will be adequately covered by a representative from that focal point alone. Instead, cast a wide gaze over all government institutions that might feel left out if they were not represented. Suggest to the government authority responsible for developing the plan that full representation would ultimately derive greater commitment and more durable results.

National as well as international non-governmental organizations (NGOs) which have a long-term commitment in vulnerable areas should be included in the process. Governments may not want NGOs directly involved in the planning process, but should be urged to link them into the overall objectives of the proposed plan. Similarly, bilateral donors should be kept informed about the planning process. Governments may not want them to play a direct role in the planning process; nor might the bilateral donors wish to become directly involved in the process. However, for any financial support which the eventual plan might require for implementation, a well-informed bilateral donor community can be a distinct advantage. Including UN staff in the planning process may also lead to successfully utilizing their agencies' resources.

With all the potential participants that might become embroiled in the planning process, you might wonder if the planning process can ever be sustained and controlled. It can, if you think in terms of the variety of mechanisms in which participation can take place. For example, a national conference can set the overall tone for a wide range of ministries and relevant national and international institutions. A series of work groups asked to design specific components of the plan also distributes the load and may allow for greater participation. Workshops can bring together the various "sub-groups" which inevitably will work under the guidance of a core steering group that can facilitate overall activities.

*Q. In your country, which entities should be involved in the planning process?*

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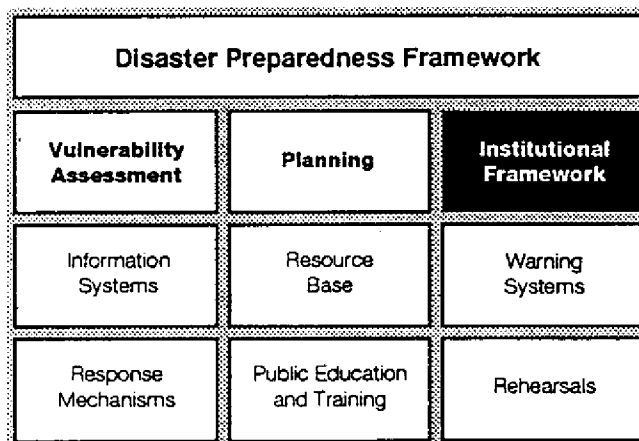


## Status of the plan

A variety of indicators will suggest if the plan is intended to be taken seriously. An obvious indication will be the level of commitment by participants to the planning process itself. An equally evident indicator is if the funds for implementing the plan are adequate. A clear sign of commitment on the part of government to the plan will be the enabling legislation that the plan may receive. A disaster preparedness plan has to be underwritten by the laws of the nation. Unless roles and responsibilities of ministries and individuals are reinforced by legal sanctions, implementation will be jeopardized.

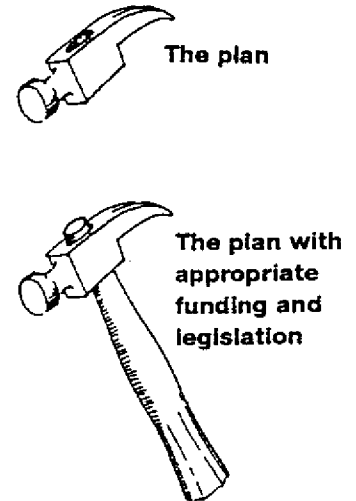
With these various points in mind, you should now focus upon the contents of a disaster preparedness plan. Whether that plan is a contingency plan focusing on specific types of emergencies or on specific geographic areas, or a national disaster preparedness strategy, there are certain features common to all such endeavors. Generally speaking, all planning exercises will have to address various points which will eventually be incorporated into a planning document.

## Institutional structure



A coordinated disaster preparedness and response system is an essential condition of any disaster preparedness plan. There is no standard way of ensuring effective coordination. Each design will depend upon the traditions and governmental structure of the country under review. However, a plan will rapidly deteriorate unless there is "horizontal coordination" at central government and sub-national levels among ministries and specialized agencies and "vertical coordination" between central and local authorities. Avoid creating new organizations for disaster preparedness. Instead, work within established structures and systems. The emphasis must be upon strengthening existing institutions rather than devising additional layers of bureaucracy.

Disaster responses generally need the sanction of senior levels of government. For most disaster plans in the developing world, the approval of a president, prime minister or at least a deputy prime minister becomes the trigger mechanism for implementing a response. Consider the relationship between the senior level of government, ministerial levels and the functional disaster preparedness focal point.



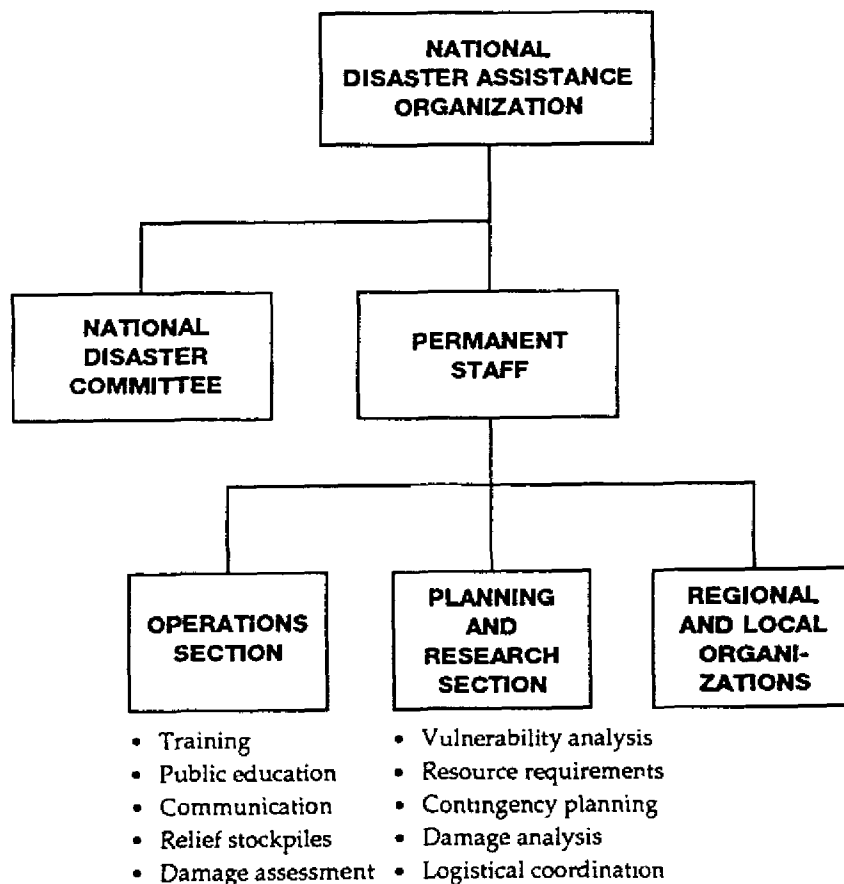
*Work within established structures and systems.*

*ANSWER (from page 16)*

Answer might include specific references to national, regional or local government entities, UN agencies, grassroots organizations, NGOs and donors.

An effective disaster preparedness plan will reflect an inter-ministerial response to disaster warnings and occurrences. These inter-ministerial committees, such as exist in India, should not be below the level of Permanent Secretary. This sort of committee will include a representative from the designated disaster preparedness focal point, and will keep appropriate senior government officials apprised on broad issues concerning preparedness and relief implementation.

A focal point should be designated to ensure effective disaster preparedness and to act as a coordinating mechanism for disaster response. This focal point can be attached to or become a specialized agency, such as a Relief and Rehabilitation Commission. A focal point can also be developed within a ministry regarded as essential for certain types of disasters. For example, a Ministry of Agriculture might house the focal point if the nation's principal concern involves droughts which affect agricultural production. Finally, a focal point might be attached to the office of a senior level of government, as occurs in the Prime Minister's office in Jamaica. The need for a strong focal point is essential.



**FIGURE 2<sup>1</sup>**  
National disaster  
assistance organization.  
detailed plan of organiza-  
tion and functions

<sup>1</sup> Office of the United Nations Disaster Relief Coordinator, *Disaster Prevention and Mitigation*, Volume 11, Preparedness Aspects, United Nations, New York, 1984, p 19.

A variety of institutional options related to regional and community structures also exist. In the Ethiopian National Disaster Prevention and Preparedness Strategy, the government has decided to have parallel systems at regional and local levels. Representatives from relevant central government ministries are located at regional and local levels to work hand in hand with committees comprised of representatives from local peasant associations, as well as local and regional officials. In China and India, however, regional and state governments respectively determine most of the functional activities needed to develop preparedness activities and to implement plans.

Within these various institutions, who does what to implement various aspects of the disaster preparedness plan? Defining roles and responsibilities is one of the principal purposes of the plan. There is no standard method of delegation that will fit the requirements of all countries. There are, however, three points to keep in mind.

### *Responsibilities should reflect established expertise*

It is of little use to give authority to implement an emergency food or cash-for-work program to a body that has little knowledge about the substance of such a program. Therefore, if one sort of measure to assist farmers to survive after the onset of a severe drought is to expand public works construction, then the responsibility for implementing such expanded projects should be with the relevant ministry.

### *Roles and responsibilities have to be clearly defined*

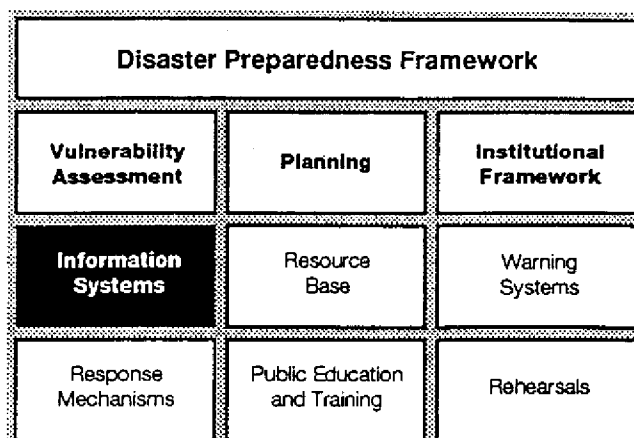
Imprecision breeds confusion. During the planning process, you inevitably will be tempted to make compromises about who should be doing what in order to move the process along. While convenient in the short-term, too many compromises early on may make the plan unworkable in the longer term.

### *Roles and responsibilities have to be appropriate*

Effective planners avoid imposing roles and responsibilities upon individuals or institutions that will not be capable of implementing them in the foreseeable future. Nor does it make sense to assign roles and responsibilities without regard to the political and social conditions of the country or relevant regions within the country. This is especially important regarding the functions of local officials and local institutions. Botswana's successful preparedness is due in part to the way it uses local tribal leaders to elicit information about needs instead of relying on a central government official who may be less familiar with particular areas and local relief requirements. Assessing vulnerability builds a framework for on-going information updates about the infrastructure and socioeconomic conditions of disaster-prone areas and vulnerable people. At a very early stage in the planning process, you should decide on who will be responsible for providing updates of vulnerability profiles and on the frequency of such exercises.

*Imprecision breeds confusion.*

## Information systems



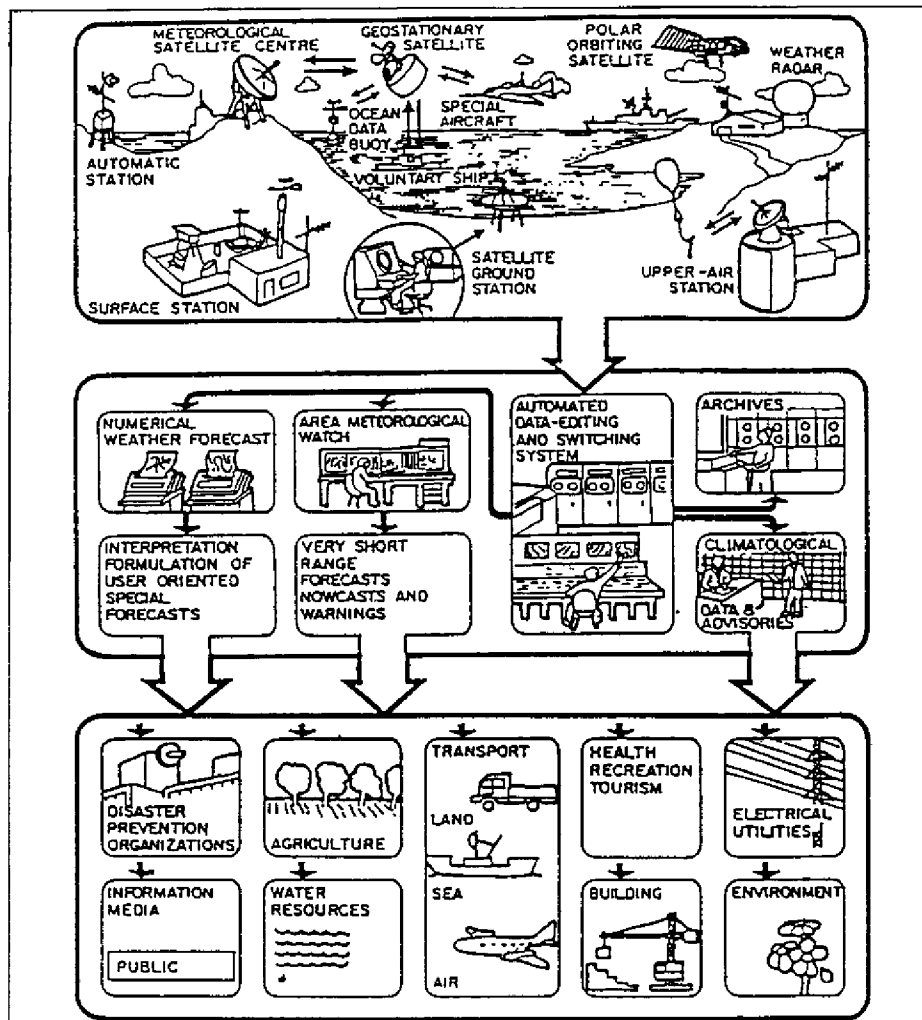
Early warning systems are normally comprised of various elements. They can stem in part from information provided by meteorological offices, by a Ministry of Health (for example, nutritional surveys), or by a Ministry of Agriculture (for example, crop forecasts). One major criterion for an effective plan is an established system to ensure the coordination of all these different inputs. An interministerial information committee can serve this purpose. This sort of committee has to have clear-cut guidelines, reporting formats and mechanisms as well as established reporting procedures. It is essential to link the disaster preparedness focal point to this committee. Perhaps the focal point might serve as the chair organization for this interministerial information committee.

An added complication involves the combination of this information with grass-roots information, the "early warning" information obtained from those most directly threatened, which is highly relevant and often ignored. Ensuring that appropriate information systems are in readiness includes stimulating information exchange systems within each agency in the emergency environment, between organizations and between the organizations and the public.

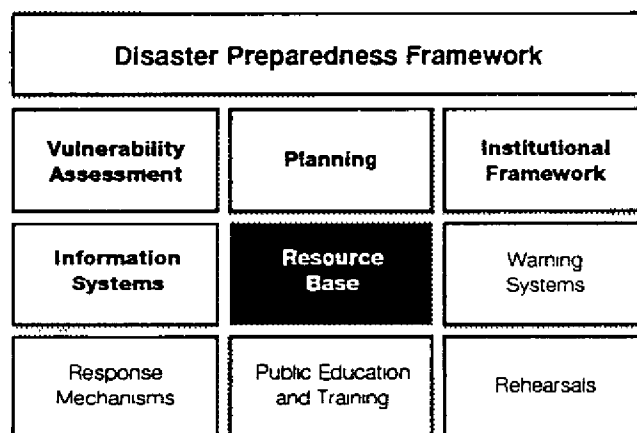
The most appropriate means of gathering and disseminating early warning information must be carefully assessed and well defined within the disaster preparedness plan. It is imperative that early warning messages be understood by the people for whom they are issued.

Vulnerability assessment updates and the coordinated approach to early warning should encompass all the standard features required of any monitoring system. This includes determining changes in patterns of disaster threats, numbers of vulnerable people, and preparations for response. Monitoring must include an overall disaster preparedness assessment process in which essential physical aspects of the plan are reviewed system-wide (for example, available transport fleets and warehousing facilities) to ensure that when disaster strikes, all that the plan anticipates is in place. Monitoring must also include an assessment process after a disaster strikes. This is meant to ensure that the implementation of the plan is efficient, and that appropriate and timely relief is being distributed to targeted beneficiaries. (See Figure e).

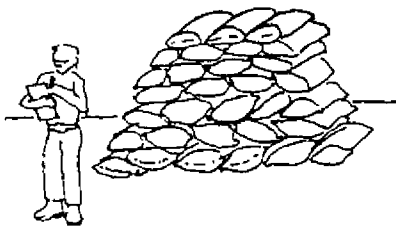
Specialized studies, such as transport capacity studies, will enhance the type of information and issues that should be built into early warning systems, vulnerability assessments and evaluations of resources required to implement the disaster preparedness plan.

**FIGURE 3****World Weather Watch**

*The operation of a national Meteorological Service: observations and data collection (top), data processing and preparation of forecasts, warnings and climatological advisories (center), dissemination of forecasts and other specialized information to users (bottom).*

**Resource base**

The requirements to meet disaster needs will depend upon the types of disasters the plan anticipates. Such needs should be made explicit, and should cover all aspects of disaster relief and recovery implementation. Specific arrangements should be established whereby each party to written agree-



ments can secure goods and services as required. Critical issues include special internal arrangements for the acquisition and disbursement of funds; policies and agreements for the use of other's equipment and services; and emergency funding strategies.

In assessing the resources required for a disaster preparedness plan, the following elements should be considered.

### *Disaster relief funding*

It is important to establish an emergency contingency fund. There is often a need for items that cannot be easily stockpiled, such as medicines, or items that were not anticipated, such as alternative fuels. A special reserve fund is worth considering in your preparedness plan.

Insurance is another form of creating reserves against potential future disasters. The following box illustrates one application of insurance.

An example of harvest insurance under government sponsorship comes from Costa Rica.<sup>1</sup> Since 1970, a Whole Harvest Insurance Scheme has been operated by the State-run National Insurance Institute. This covers up to 80 per cent of the value of disaster-damaged crops. This scheme incorporates aspects of disaster prevention (in that no crop loans are granted prior to the submission of a request for insurance); of agricultural extension and development (because certain minimum technical standards are required of farmers); of economic planning (as some control can be exercised over the different kinds of agricultural production); and of social engineering (in that insurance coverage helps to even out a farmer's income over good years and bad)

### *Disaster preparedness funding*

Solicit funds to pursue the activities of the planning process, including special studies, public awareness and training. Also seek funds to develop major inputs for the plan to function effectively.

### *Mechanism for aid coordination*

Establish a means to ensure a coordinated, useful and timely response from the international community if and when its assistance is required. Not only should such a mechanism incorporate inputs from bilateral donors, but possible assistance from non-governmental organizations should also be brought into the coordinating mechanism.

### *Stockpiling*

Consider the types and amounts of materials needed; whether they can be stockpiled, and where. This is not an easy task. In particularly disaster-prone countries, the very poverty that makes large segments of a society vulnerable to disasters means that stockpiling significant amounts of relief materials is a luxury. However, donors often are willing to make contributions to various forms of "stockpiling," such as food security reserves.

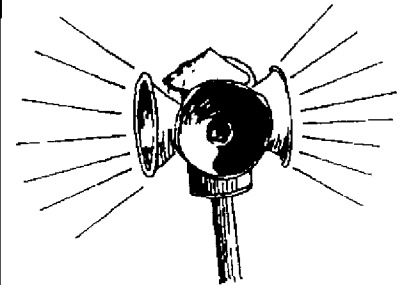
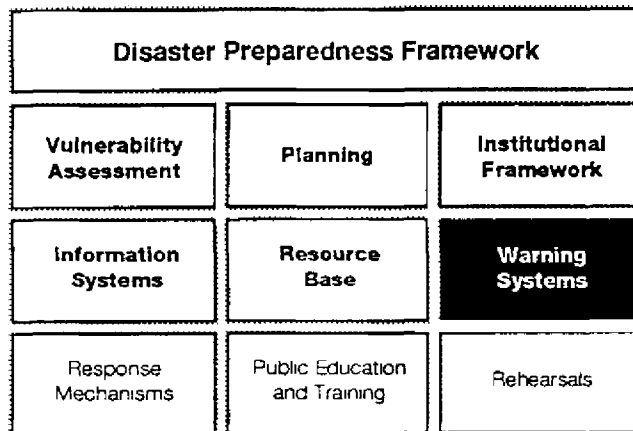
<sup>1</sup> Office of the United Nations Disaster Relief Coordinator, *Disaster Prevention and Mitigation*, Volume 11, Preparedness Aspects, United Nations, New York, 1984, p. 14.

**Q.** Briefly describe how an entity in your region has successfully planned a resource base for disaster relief.

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## Warning systems



You must assume that functioning communications systems, such as telephones and telexes, may not be available in times of a major disaster. Begin to plan a warning system around that assumption. Consider what type of communications equipment will be needed and sustainable if power lines and receiving stations are destroyed. Preparedness plans should include provisions for access to alternative communication systems among police, military and government networks.

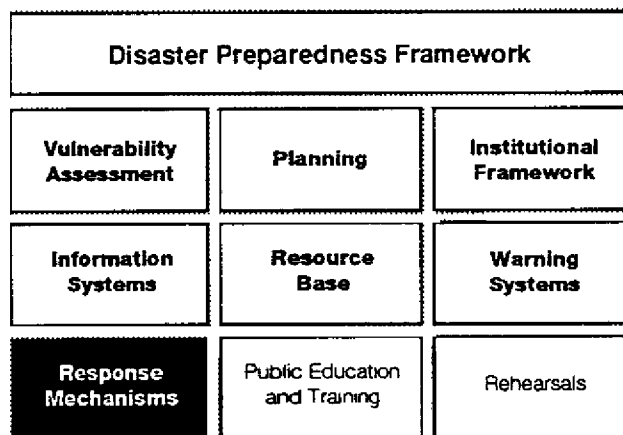
All too often, those for whom disaster warning systems are targeted have little faith in the warnings. This may be due to a human inclination to ignore what appears inconvenient at the time. It also reflects a general misunderstanding of the warning's message, or frustration with yet another false alarm. Planners of effective warnings take into account the public perceptions of warnings, training related to reacting to warnings, as well as local conditions, attitudes and experiences.

Whenever possible, the international community should be forewarned about hazards that might lead to appeals for international assistance. The procedures for this form of warning should also be anticipated within a disaster preparedness plan.

In a report entitled "The Quantitative Evaluation of the Risk of Disaster from Tropical Cyclones," issued by the World Meteorological Organization in 1976, the authors emphasize the connection between the capability of the forecasting service and the point at which preparedness measures should be implemented.<sup>1</sup> Some may be able to be put into effect during a warning period. Others may have to be instituted at the beginning of the tropical storm season, or included in even longer-term action. An example is given, although times may vary from one country to another.

- *Every 12 hours* an extended projection of the storm track for periods up to 72 hours ahead should be made available by the forecasting service so that all responsible authorities are able to initiate certain preparedness measures
- *At least 36 hours ahead* the forecasting service should designate the coastal sector along which a tropical storm watch should be mounted. This would also be the signal for further preparatory action to be taken.
- *12-18 hours before the tropical storm's landfall* the forecasting service should issue warnings specifying the areas concerned, the expected wind strengths and rainfall conditions, and the likely points of storm surge. The hydrological service should issue warnings in regard to river flooding and the possibility of flash floods.

## Response mechanisms



There are a vast number of responses that ought to be considered.. Each response depends upon the nature of the threat. Some of the broader categories of response for a variety of hazards include:

- evacuation procedures
- search and rescue
- security of affected areas
- assessment teams

*ANSWER (from page 23)*

Answers might include any of the four elements set forth in the section on "Resource base."

<sup>1</sup> Office of the United Nations Disaster Relief Coordinator, *Disaster Prevention and Mitigation*, Volume 11, Preparedness Aspects, United Nations, New York, 1984, p 31-32



- activating special installations (such as emergency hospital facilities)
- activating distribution systems
- preparing emergency reception centers and shelters
- activating emergency programs for airports, harbors and land transport

Once an effective disaster preparedness plan is in place, these response mechanisms should be familiar to potential beneficiaries or to those with the responsibilities of implementing such measures. The matrix found on page 27 demonstrates a range of needs which may arise in different types of emergencies

## Public education and training

Disaster Preparedness Framework		
Vulnerability Assessment	Planning	Institutional Framework
Information Systems	Resource Base	Warning Systems
Response Mechanisms	<b>Public Education and Training</b>	Rehearsals

One emphasis of a disaster preparedness plan should be to anticipate the requirements for a disaster relief operation and the most effective ways of meeting those requirements. The planning process will only be effective if those who are the ultimate beneficiaries know what to do in times of disasters and know what to expect. For this reason, an essential part of a disaster preparedness plan is the education of those who may be threatened by disaster. Such education may take the following forms.

### *Public education in schools*

Standardized curricula for children and young adults should include information about actions which should be taken in case of a disaster threat or occurrence.

### *Special training courses*

Workshops should be designed for an adult population, either specifically or as an extra dimension of on-going programs, such as literacy or cooperative training sites.

### *Extension programs*

Community or village-based outreach workers should be trained to provide relevant information

### *Public information*

Although television, radio and the printed media will never replace the impact of direct instruction, sensitively designed and projected messages can provide a useful supplement to the overall process.

In establishing educational training, remember that education is often a two-way process in the field of disaster preparedness. For example, if a group does not fully comprehend the warning sequences in a tropical storm preparedness plan, it may be that the warning sequences need to be reworked.

Training of those who will implement portions of the disaster preparedness plan is essential. Those responsible for issuing warnings must be trained as well as those who will have direct relief functions. Training cannot be a one-time event. Refresher courses are essential. Training should be active in every way possible. Actual exercises should be performed, such as evacuation drills.

An effective disaster preparedness plan will also give practical guidelines on its various components, such as organizing reception camps and relief shelters. These guidelines should be the "basic text" for related training exercises. The figure found on page 28 is a poster from New Zealand which effectively demonstrates disaster preparedness actions for the general public.

**Q.** *In which aspect of public education or training has your agency best contributed to disaster preparedness? Explain why.*

**A.** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Needs which may arise in different types of emergency

Sectors in which UNICEF assistance might be considered

- Needs frequently experienced  
□ Needs sometimes experienced

C Depending on climate; may be needed if weather is cold and/or wet  
Needs rarely arise (or usually of low priority).

Where disasters occur in combination—e.g. floods following a tropical storm—the combined effects/needs must be considered.

Sector in which needs may arise	Sudden, cataclysmic disasters			Long-term, continuing emergencies		
	Earth-quakes	Storms	Floods	Droughts, famines <sup>1</sup>	Conflicts	Displaced populations
<b>Food, nutrition and income</b>						
Short-term general ration distribution	■	■	□	■	■	■
Agricultural production	□ <sup>U</sup>	■	■ <sup>R</sup>	■	□	■
Long-term selective provision of employment and/or food	□	□	■	■	■	■
Nutrition surveillance	□	□	□	■	■	■
Special feeding <sup>2</sup>	□	□	□	■	□	□
<b>Health services</b>						
Reinforcement of management and personnel	■ <sup>3</sup>	□	□	□	■	■
Reconstruction, transport and equipment	■ <sup>3</sup>	■	□	□	■	■
Drugs and other supplies	■ <sup>3</sup>	■	□	□	■	■
Surveillance for communicable diseases	□	■	□	■	□	■
Immunization	□	□	■	■	□	■
Diarrhoea control	□	□	■	■	□	■
<b>Water supplies</b>						
Distribution, storage, treatment	■	□	■	■	□ <sup>5</sup>	■
Rehabilitation/development of sources	■	□ <sup>5</sup>	□ <sup>5</sup>	■	□ <sup>5</sup>	■
<b>Sanitation</b>						
Excreta disposal	■	□	□ <sup>6</sup>	□	■	■
Garbage/refuse disposal	■	□	□ <sup>6</sup>	□	■	■
Personal hygiene	□	□	□ <sup>6</sup>	□	■	■
Vector control	□	□	■	□	■	■
<b>Shelter and household functioning</b>						
Emergency shelter	C	C	□ <sup>7</sup>	□	C	■
Reconstruction	■	■	□ <sup>7</sup>	□	C	C
Blankets	C	C	C	□	C	C
Household utensils etc.	■	□	□ <sup>7</sup>	□	□	■
<b>Child care and social services</b>						
Community social services	■	■	■	■	■	■
Unaccompanied children	□	□	□	□	■	■
Schools/education	■	□	□	□	■	■
<b>Overall management and logistics</b>						
Reinforcement of management capacity and systems	■	■	■	■	■	■
Transport, vehicles, fuel, spares, maintenance	□	□	□	□	■	■
Storage facilities	□	□	□	□	■	■
Possible secondary effects/disasters	Fires, landslides, local floods, tsunamis	Floods, landslides, storm surge		Displaced populations	Displaced populations	

<sup>U</sup> Primarily in urban areas.

<sup>R</sup> Primarily in rural areas.

<sup>1</sup> Only if major irrigation works damaged.

<sup>2</sup> Assuring appropriate weaning foods and food for vulnerable groups (possible supplementary feeding); therapeutic feeding for severely malnourished children; combating Vitamin-A or other specific deficiencies.

<sup>3</sup> For casualty treatment in first few days only.

<sup>4</sup> Only if ground-water flows changed.

<sup>5</sup> If wells or usual surface sources contaminated or inaccessible.

<sup>6</sup> Depending on the type of construction.

<sup>7</sup> Only in cases of destructive "flash" floods (in valleys).

<sup>8</sup> "Food emergencies" without displacement.

**Volcanic eruptions:** Possible needs (and secondary effects) are similar to those for earthquakes within the area directly affected by the eruption. There may be population displacements.

**Tsunamis** (tidal waves caused by earthquakes): Possible needs are similar to those of tropical storms plus floods, with the added complication of contamination of wells and agricultural land by salt water.

**Epidemics:** Needs usually include specific drugs, transport, surveillance, improvement of water supplies, personal hygiene and sanitation. Reinforcement of health service management may also be required.

# WHEN DISASTER STRIKES HERE'S WHAT TO DO

## VIOLENT EARTHQUAKE

(When it is difficult to stand or walk)

### IMMEDIATE ACTION

#### Indoors

Get the family into doorways, or under tables; bedridden folk under beds, keep away from windows and chimneys. Do NOT rush outside.

#### Outdoors:

Keep clear of buildings, high walls, or dangling electric wires. Downtown, shelter under archways or doorways but do NOT re-enter damaged buildings.

#### Driving

If you can feel the earthquake when driving, it is serious. Pull off the road, stop and stay in the car.

### AS SOON AS YOU CAN

Put out all domestic fires and heaters.

Turn off at mains electricity, gas, home heating oil and water if you suspect that house has been damaged.

Leave the house if a fire starts that you cannot put out at once.

Leave the house if you detect a gas leak after turning it off at the mains.

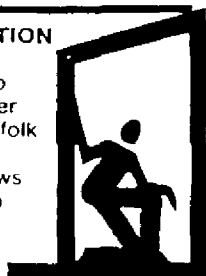
Open all doors and windows.

Save water in tanks and cisterns. Fill your emergency containers.

Leave the fridge shut as much as possible if power has failed.

Free dogs and cats.

Follow your Civil Defence checklist — back cover.



heating oil and gas if you have to leave the house.

Lock all outside doors and windows if you have to leave the house.

Do NOT enter floodwater on foot or in a car if it can be avoided. Never wander around a flood area on your own.

Follow your Civil Defence checklist — back cover.

## TSUNAMI (Commonly called Tidal Waves)



If you are in low lying areas near to the sea or estuary.

Listen to the radio for information and advice.

Act as for floods.

Move to high ground or 500 metres inland if tsunami warning is given.

Keep away from streams flowing into the sea.

Never go down to the beach. If you see a wave it will be too late to escape it.

Follow your Civil Defence checklist — back cover.



## STORM FORCE WINDS AND CYCLONES

Listen to the radio for information and advice. Allow considerable margin for safety. Storm may change direction, speed or intensity within a few hours.

Preparation — If storm force winds or severe gales are forecast for your area.

Store or secure loose boards, corrugated iron, rubbish tins or anything else that could become a missile.



Tape up large picture windows. Follow your Civil Defence checklist — back cover.

### When the Storm Hits

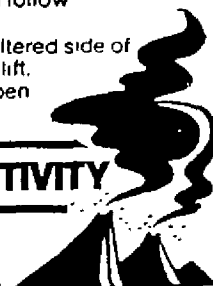
Stay indoors and shelter in strongest part of the house.

Listen to the radio and follow instructions.

Open windows on sheltered side of house if roof begins to lift.

Find shelter if in the open.

## VOLCANIC ACTIVITY



Listen to the radio for information and advice.

Find shelter but NOT in a building with a low pitched roof if heavy ash is falling. Avoid basements or confined spaces where gases may accumulate.

Move to a ridge line if you are in the open. Keep well above the shoreline of large lakes.

Wear substantial covering over your head and body if you have to move in an ash shower. Breathe through a handkerchief, carry a torch even if it is daytime and move as quickly as you can away from the eruption.

Follow your Civil Defence checklist — back cover.



KNOW WHAT YOU HAVE TO DO  
BEFORE YOU HAVE TO DO IT.

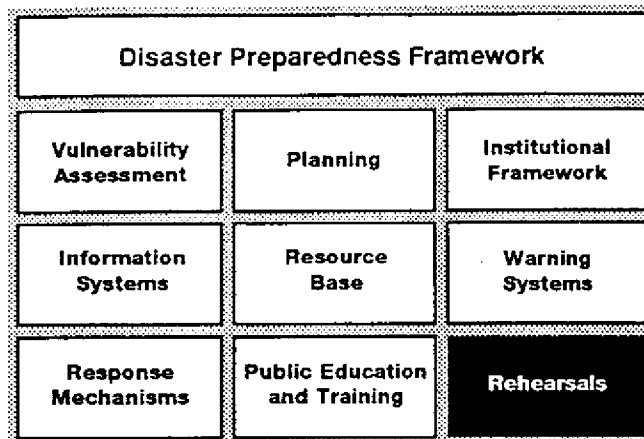


Listen to the radio for information and advice.

Disconnect all electrical appliances and move all valuable personal and household goods, food, and clothing out of reach of water if you are warned or if you suspect that flood waters may reach the house.

Prevent dangerous pollution — move weedkillers and insecticides out of reach of the water. Turn off electricity, home

## Rehearsals



As with most simulations, disaster preparedness rehearsals cannot portray the full dynamics and chaos of a disaster relief operation. However, this is no excuse for avoiding the need to rehearse the disaster preparedness plan. Rehearsals will reemphasize points made in separate training programs, and test the system as a whole. Rehearsals invariably expose gaps that otherwise might be overlooked.

Rehearsals must be conducted system-wide and taken seriously. System-wide means that all the components which would be involved in a real disaster situation, from central to local authorities, should be rehearsed. Be forewarned that cynicism and halfheartedness may dog the rehearsal. You must persevere, because it is the nearest anyone will get, until disaster strikes, to seeing if the plan is effective. Rehearsals are also the only way to keep plans fresh, especially during extended periods without disasters.

A two-day exercise held in November 1982 in Yugoslavia simulated an emergency at the Krsko nuclear power plant.<sup>1</sup> More than 70,000 people took part, including 8,000 officials in off-site and on-site response groups and organizations. As part of the exercise, one village in the vicinity of the plant was selected to demonstrate full-scale evacuation, and people in a wider area were told to take shelter. Precautions were taken to prevent contamination of the food supply; fire-fighting demonstrations were held under full radiological contamination control; decontamination facilities were set up, and traffic controls were established.

<sup>1</sup> Office of the United Nations Disaster Relief Coordinator, *Disaster Prevention and Mitigation*, Volume 11, Preparedness Aspects, United Nations, New York, 1984, p. 101.

ANSWER (from page 26)

Answers might elaborate on any of the four forms of education and training listed above.

## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.