research alternatives

THE LESSONS LEARNED SYSTEM

MANAGEMENT ROUNDTABLE

DAMAGE ASSESSMENT

The attached summary of 31 evaluations of damage assessment and the Management Roundtable for which it was prepared are intended to review the collected record of OFDA performance in particular activities undertaken or resources utilized in disaster assistance. The purpose of these reviews is threefold:

First, to identify both positive and negative aspects of the performance of the activity/resource which, when brought to the attention of experienced OFDA staff members, may stimulate thought and discussion about improving future performance;

Second, to organize recommendations for improving performance of the activity/resource so that conscious effort can be made toward such improvement before the next disaster; and

Third, create a list of especially important reminders, procedures, warnings, etc. which will be available on The Lessons Learned System for quick review by anyone who, in the future, attempts to carry out the activity/resource.

OFFICE OF FOREIGN DISASTER ASSISTANCE
LESSONS LEARNED SYSTEM

MANAGEMENT ROUNDTABLE

ON

DAMAGE ASSESSMENT

This review of damage assessment is compiled from 31 evaluations by nearly 50 sources in seven different types of manmade and natural disasters which occurred in 11 countries. In the pages which follow, several findings from the review of these damage assessment evaluations will be presented. In the first section below are general reports about the reasons for damage assessment and the types of assessments undertaken. These are followed by 13 specific areas of concern which deserve the attention of OFDA.

GENERAL OVERVIEW

In the review of evaluations of damage assessment currently contained in The Lessons Learned System, it was discovered that damage assessments were of three types.

First, and most frequent, damage assessments were conducted in the immediate aftermath of a disaster to determine what form of emergency relief aid was most appropriate.

> Two subcategories of this emergency damage assessment appeared in the disasters reviewed: **structure assessments** and **human assessments.** The former type involved an evaluation of the conditions of the buildings, roads, bridges, and utilities of the strickened area. The latter type reviewed the health, medical, nutrition, and sanitation requirements of the victims.

Second, longer term rehabilitation was the reason behind a few damage assessments. These most often were undertaken in major disasters with the objective being the acquisition of data for future development aid programs or special congressional appropriations.

Third, a very few foresight damage assessments were conducted. These occurred in instances where OFDA determined a potential disaster was in the making and an anticipatory damage assessment was undertaken. The intended result of such damage assessments was the ability to plan relief prior to the actual event and subsequent disaster declaration.

Five different groups conducted the damage assessments covered in this review.

- o OFDA staff on TDY
- o Subject area experts sponsored by OFDA
- o The AID Mission
- o The victim government
- o Remote means, namely, aircraft photo reconnaissance or satellite

Among these five types of assessment, a few generalizations appeared on The Lessons Learned System.

For OFDA staff, generally favorable evaluations were made in damage assessment conducted in large, no technical disasters. Where technical expertise was necessary (for example, health, medical, or livestock assessments), greater knowledge was necessary for a comprehensive assessment. In these technical disasters, subject area experts usually received high marks.

The only specific recommendation relating to OFDA staff assessments was: "Never, never send the Action Officer on TDY to the disaster site. The Alternate Officer will spend a tremendous amount of time 'catching up' on what happened and will not be as prepared as the Action Officer to conduct operations here."

In general, the early assessment work of the AID Mission left much to be desired, as will be detailed below.

Finally, in all but one case, air photo reconnaissance and satellite remote sensing was found to be less than desirably effective, but continues to be a resource filled with potential. Recommendations from three disasters on The Lessons Learned System suffice to describe the range of findings:

From the Fiji cyclone: Generally, do not recommend aerial surveys, but when doing so, carefully define what is expected, limits of use, etc.

From the Guatemala earthquake: Air reconnaissance is not particularly recommended for repeat except when relief phase has passed or when it is necessary to make a big splash to attract attention.

From the Guatemala earthquake: OFDA should pursue potential of high altitude reconnaissance and develop a system (with NASA or USAF) to provide faster coverage. The true value of the U-2 experiments has been clouded by extraneous concerns about timing, validity, and scope of interpretation. Should look further into use for future.

From the India cyclone: OFDA should implant knowledge of potential assessment role of Landsat; should push use of this inexpensive tool when damage warrants.

SPECIFIC DAMAGE ASSESSMENT PERFORMANCE OBSERVATIONS

Reviewing the 31 evaluations of damage assessment on The Lessons Learned System resulted in the identification of over a dozen important findings relating to problems or consistent occurrences in the conduct of assessments. Each of these findings is presented in summary form below. Where the findings suggest questions which might be addressed by OFDA, these are included. Where recommendations exist on The Lessons Learned System, these are detailed.

As you read these summaries, questions, and recommendations, please try to recall in your own experience whether they are valid. At the Management Roundtable, we shall try to ascertain the relative merit of all these findings, suggestions and recommendations as they relate to improving future performance of damage assessment. Therefore, please think about them in light of your own experience.

Reasons for an Expert Damage Assessment

Damage assessment is a skill. It surely combines a scientific, analytical component with the art of careful observation amid the chaos of disaster. As a result, there was near-universal agreement among the sources in this review on the need for and importance of an expert damage assessment. The words "accuracy," "confidence," and "information otherwise unobtainable" ran through all such arguments.

Where problems arose, they most often had their root in the use of damage assessment personnel who lacked either experience or training, in other words, previously acquired skill in damage assessment.

Two particular foci existed for this problem.

One was the use of AID Mission reports on damage. Seldom, in all the disasters reviewed, was the information provided by the Mission of unimpeachable quality. Where observing how many buildings were left standing was the important data, Mission reports were acceptable. However, where more subtle judgements were required, Mission reports often were misleading. Famine (both human and animal) and health/medical problems found the unskilled Mission observers especially vulnerable.

The other problem area in availablilty of skilled personnel arose in the use of new staff, both professional and administrative, to conduct damage assessments. The first damage assessment conducted by a new staff member, or the first assessment of a new type of disaster is, admittedly, difficult. This problem is compounded by damage assessments conducted by high-level administrative personnel whose on-site presence is important for representational purposes but whose damage assessment skills may be less well oiled.

Two procedural questions are suggested by these findings.

First, should OFDA devote resources to establishing what skills, talents, or intuitive powers are most appropriate for conducting a damage assessment? Have successful damage assessment personnel ever been queried as to what it was which enabled them to pinpoint accurately needs?

Second, how are these skills or talents best acquired by a new staff member? Should there be a formal policy of OFDA which requires a new staff member to accompany an experienced assessor on x number of on-site visits? Should a formal training program be established which provides a mechanism for experienced staff to transfer their skills among other staff?

A RECOMMENDATION FROM LESSONS LEARNED:

Senior OFDA representatives presence particularly aids the AID Mission Director and the Ambassador in relations with the government; however, if the purpose of the TDY is officially damage assessment, then the "senior OFDA rep could have benefitted from the help of an operations officer."

Relations between OFDA and the AID Mission

The relationship between OFDA and the AID Mission has two interlocking parts, both containing the potential for tension growing out of misunderstanding. The first part of the relationship begins with the disaster impact and continues up to the arrival of a damage assessment officer. During this period, the Mission acts as the U.S. Government's representative in all dealings with the victim government. In the second part of OFDA-Mission relations, a new role is added, the damage assessor, who suddenly begins operating as a direct representative of Washington. During both these periods, the opportunity for conflict exists.

Relations Prior to Arrival of Damage Assessor

Problems uncovered in several disasters revolved around the Mission's strongly felt need to "do something" coupled with the

Mission's lack of knowledge about what to do.

While the Ambassador is the sole contact with the victim government, there appeared a tendancy to accept the government's view of the extent of disaster and initiate a response of some type. In the case of the Fiji cyclone, the Ambassador made several promises to the Prime Minister; one involved photo reconnaissance which the U.S. would undertake. This promise locked OFDA into providing such assistance when (a) the capability to conduct such reconnaissance existed on the island of Fiji, making U.S. aid less necessary, and (b) no one cleared the use of a DOD photo reconnaissance team with DOD. In an effort to help as much as possible, the Ambassador ignored the limitations inherent in his offer and raised the expectations of Fiji so that the final product was somewhat disappointing to them. Similarly damaged expectations arose in the use of Landsat in India.

Two cases also suggest that the Embassy was reluctant to have damage assessment personnel arrive from Washington. In each case, the Mission indicated that it welcomed an assessment, but felt that it should be delayed until the Mission, itself, gathered enough information to make the trip worthwhile. And in a third case, the Mission initiated its own damage assessment even though it quite clearly lacked the staff capability to do so.

Two questions emerge from these findings.

First, what efforts should be made to explain the importance of an outside damage assessment to the Mission staff, particularly the importance of witholding the promise of aid until a skilled damage assessment officer has estimated the appropriate U.S. response?

Second, and somewhat conversely, what efforts should be made to improve the skills of Mission staff in making an immediate, rough assessment of damages? This assessment might have the objectives of (a) permitting the Ambassador to best disburse his $25,000 and (b) indicating whether a more complete damage assessment (with an officer from Washington) is necessary.

Relations Following Arrival of Damage Assessor

Problems arose which were reported in several disasters in which considerable confusion existed over the exact purpose of sending someone from Washington (either from OFDA or a subject area expert sponsored by OFDA) to the disaster site.

The Mission, in nearly every disaster, indicates that it is overburdened and would like to have someone from OFDA arrive to run the relief program. At the time that this feeling among Mission staff is reaching its peak, a damage assessor usually

arrives from the States. To him, the task is clear: Assess the extent of damage. The Mission, as seen in the disasters reviewed, has quite different perceptions: Run the relief operation.

The result of this confusion is usually a challenge to the authority of the individual damage assessor. He has been told that he is a direct representative of OFDA and is charged with achieving his tasks and employing whatever Mission resources are necessary. At least one Mission very much resented both the damage assessor running all over the countryside and his use of Mission resources to do so. Furthermore, the sometimes pre-eminent relationship established between the victim government and the damage assessor has been viewed by the Mission as an unwelcome intervention in their own relations with the government.

A RECOMMENDATION FROM LESSONS LEARNED:

A cable should be sent to the Ambassador notifying the Mission of the damage assessment. It should clearly state (a) the responsibilities of the damage assessor, (b) the assistance the assessment will provide to the Mission, and (c) the information needs and logistical support required by the damage assessor which can be facilitated by Mission readiness.

Relationship with Victim Government

A damage assessment by any of the four methods involving outsiders (OFDA, experts sponsored by OFDA, AID Mission, or remote reconnaissance) can only take place with the permission of the victim government.

In at least two cases, the Romania Earthquake and the Andhra Cyclone, the government was quite reluctant to grant that permission. The initial damage assessments were conducted by the government and the U.S. Mission was almost entirely dependent upon that information in its reports to OFDA. When damage assessment assistance was offered, both governments took several days to respond, saying initially that such aid was welcome but should not be immediately provided.

Similar reluctance was expressed when offers of air photo reconnaissance were made, both with aircraft in Guatemala and the Landsat remote sensing operation in India.

RECOMMENDATIONS FROM LESSONS LEARNED:

Need a contingency plan to assure overflight clearance readily. It is unlikely that many governments will permit blanket overflight clearance and aerial photography because of spying implications. However, to make use of photo reconnaissance or provide airlifted emergency relief, some mechanism must be

established to obtain fast, if not advance, clearance for overflights.

These concerns about overflight clearance suggest a more general problem of political sensitivities present when a foreign official begins to gather information about disaster, a topic filled with tension in most political environments. One of the successful mechanisms developed to minimize political constraints was the Multi-Donor Mission. In this form of damage assessment, representatives from several nations and/or international organizations collectively observed conditions in Mauritania and Ethiopia. This approach appeared successful in that it collected more information than would have been likely by any single damage assessor. However, a recommendation made following the MDM suggested that the MDM be given an advance guarantee of exactly to which damaged areas and high-level officials it would have access.

A RECOMMENDATION FROM LESSONS LEARNED:

Conditions created by OFDA to conduct a damage assessment should not be unreasonable. We must recognize political sensitivity. However, when a government is hesitant or unnecessarily slow in arranging for an expert assessment (with either domestic or foreign assessors), the U.S. should take the approach of our Ambassador to Romania following the earthquake there. He recommended that the U.S. not consider any assistance beyond the $25,000 already provided until a damage assessment had been completed and requests based on the assessment made.

A final problem which arose in the disasters reviewed was the reluctance of governments to employ local resources if foreign aid seemed available. In the Fiji cyclone, air reconnaissance capability existed, yet when the Ambassador offered U.S. assistance, the Prime Minister readily agreed, ignoring in-country capabilities.

A RECOMMENDATION FROM LESSONS LEARNED:

Find out before making offers of damage assessment if a local capability exists and assess the likelihood of the government conducting an assessment on its own.

Role of the Damage Assessor

In several of the disasters reviewed, the job of assessing damage was informally combined with other on-site efforts. This was especially true among subject area experts sponsored by OFDA. For example, a U.S. Forest Service expert sent to determine what U.S. assistance might be required in a large fire made consider-able contributions to the actual procedures developed in controlling the fire. Similarly, a transportation expert sent to assess food distribution problems was able to suggest ways to

remove transportation bottlenecks. Finally, in many instances, DAST personnel distributed small quantities of medical supplies and those with paramedical training treated casualties while they were conducting the assigned damage assessment.

No comment specifically suggested that these additional roles carried out by those conducting damage assessments were in any way detrimental to the damage assessment itself. However, a couple of comments did suggest that, for example, medical supplies should not be sent with a DAST. Clearly, the reason for the trip is the damage assessment; other activities must be secondary. This does, however, raise two questions.

First, are extra activities undertaken by damage assessors detrimental to the assessment? Should they be explicitly curtailed in pre-departure instructions?

Second, should it be recognized that damage assessors can do more on a single TDY than merely assess damage? Should personnel thus be selected who have multi-faceted skills rather than single-purpose damage assessment skills, the logic being that the former will do a competent job in damage assessment plus contribute substantively to the immediate relief needs through their other skills?

OFDA and Subject Area Experts and Agencies

Because damage assessment frequently requires quite detailed and technical knowledge, OFDA sponsored experts from other agencies of the U.S. Government in over half of the damage assessments reviewed. The most consistent subject raised under this heading was the importance of a well-established relationship between OFDA and the other agencies to assure prompt damage assessments.

The experts most often called upon are the Department of Defense DAST. Once in the field, DASTs generally recieved high marks of approval. One consistent difficulty, however, arose in obtaining the deployment of the DAST. One source detailed the long deployment process, calling its operation "poor." Deployment begins with (1) the Ambassador's declaration, (2) the request for a DAST, (3) OFDA's approval of DAST funding, (4) the approval of deployment by the Joint Chiefs of Staff, and (5) finally, deployment.

A RECOMMENDATION FROM LESSONS LEARNED:

Because damage assessment is of such importance, permit the immediate deployment of DAST upon the Ambassador's declaration and request without additional approval. Make payment part of the $25,000 Ambassador's fund.

This decision process was blamed for consistent delays of from hours to days for final DAST deployment. Particularly in an activity like air photo reconnaissance, where speed of response is vital, any delay is counterproductive. Faced with this realization, in one disaster, OFDA offered the services of DOD before securing DOD's approval and thus initiated some increased tension in the relationship.

A RECOMMENDATION FROM LESSONS LEARNED:

OFDA needs to develop in cooperation with DOD a system of steps or triggers which will rapidly deploy photo reconnaissance when certain conditions are met.

Among the other agencies with whom OFDA worked on damage assessments, three stand out: Center for Disease Control (CDC), U.S. Geological Survey (USGS), and the Center for Building Technology of the National Bureau of Standards (NBS). In calling upon these expert resources, in nearly every case, some delays were encountered in negotiating the use of personnel. NBS, for example, took over a day to determine which staff members should conduct a building damage assessment. In another case, NBS personnel were invited by local counterparts and were on the scene of the disaster before OFDA even was informed of their availability.

A RECOMMENDATION FROM LESSONS LEARNED:

NBS should be tasked to create a list of its own in-house experts who can assess building damage plus outside firms who can do repair. The list should detail individuals with regional expertise plus private firms located around the world with on-the-spot capabilities.

A Preferred Approach to Damage Assessment

In three different disasters, considerable satisfaction was expressed with a practical approach to gathering assessment information. This approach consisted of beginning with the early picture of broad requirements and subsequently obtaining increasingly specific information. In the Romanian earthquake, this took the form of a rapid assessment of damaged buildings which needed to be torn down followed by a more thorough review of hidden structural damage assessed to identify repair requirements and procedures. In the Guatemala earthquake, damage assessment was conducted in several steps, each more specific that the preceeding ones. The first step was air photo reconnaissance, followed by broad-ranging DAST observation in towns and larger communities using vehicles. Then, teams of paramedics and DAST officers were airlifted into rural regions to begin a village by village damage assessment on foot.

These generally approving comments on a technique employed in a few disasters raise the question of whether this is a replicable pattern which should be a model for all damage assessments.

Information: Definitions of Disaster Damage

A key information problem which emerged in several disasters involved the perceptions of damage; that is, what is defined as disaster.

Different individuals sometimes came away from a site visit with dissimilar perspectives on what they saw. In the several assessments of the Mauritanian drought, two Multi-Donor Missions and three OFDA TDYs resulted in differing views on the severity of disaster and the need for relief. These outside assessments, further, differed from the AID Mission views. The Mission advocated dramatic aid measures based on their belief that raising livestock was a lifestyle. They defined the threat to cattle as a threat to the very fabric of society, reasoning that cattle herders without livestock would move to the cities, increase unemployment, and drain urban resources.

Similarly, the very words used to define damage encourage ambiguity in what is presumed to be a precise measure. Take, for example, the description of villages in the war zones of Uganda as "leveled." Upon inspection, these villages had most of their buildings standing, needing perhaps a roof and inside improvement to be habitable. Clearly, lack of precision in describing damage could substantially void the utility of otherwise credible assessments.

A further difficulty which must be faced by damage assessors and OFDA policy-makers as well involves the question of what constitutes disaster. One report from the damage assessment in Uganda summarized this problem, recommending that the observer must assess with a relative perspective on damage. The post-Amin Uganda was generally not as bad off as Haiti is normally. Thus, based on a world view, Uganda is not a disaster requiring outside assistance. The damage seen was more the cumulative result of years of neglect; thus, a development problem, not a disaster.

These problems ought to raise the question of whether it would be possible to create an agreed upon, uniform lexicon for damage assessment? Such an effort could, at least for OFDA, provide a firm basis for discussion of comparative damage across disasters.

Information: The Importance of Baseline Comparisons

Particularly true in aircraft and satellite photo reconnaissance, damage assessments increase tremendously in utility when they can be compared to pre-disaster information.

At the most specific level, epidemiologists were able to determine appropriate responses to the Ebola epidemic in Zaire because of past experience with a similar virus. Having comparative data permitted must faster analysis and action.

Similarly, satellite photos must be compared to earlier views to determine changes in structures. In both Guatemala and Fiji, it was agreed that such reconnaissance would have been more or less useless if prior maps had not been readily available for comparison. Even so, estimates of damage in Guatemala were off by 10-15% because the damage to wall was not visible from the air unless roofs had collapsed.

Perhaps the most interesting example of the importance of data to compare disaster-caused damage with occurred in the Romania earthquake. The general unavailability of blueprints for even new buildings made assessment difficult. Most perplexing, however, were the large number of pre-World War II buildings. Without prior knowledge, it was frequently impossible to tell whether structural damage was the result of the earthquake or 30-year old bomb damage.

A RECOMMENDATION FROM LESSONS LEARNED:

Do not judge the health of children by chubbiness (which may actually be a result of edoema) or by those children who are seen in the street. The sick ones are likely to be home.

Information: Validity and Reliability of Data

A theme which ran through a significant minority of the evaluations was the difficulty of obtaining reliable data. One source went so far as to offer that there will seldom be enough data to make a decision without some qualms.

Of course, the type of disaster makes a difference. The more clearly the disaster strikes, the more readily damage can be measured: number of houses destroyed, number of people injured. But, the more subtle the damage the more difficult the assessment. This is particularly true in anticipatory damage assessments. The Mauritanian drought is a case in point. According to one evaluation, at no time could anyone tell OFDA what the problem was, that is, how many livestock were affected, how many would be lost if feed and water did not arrive.

The rational for the difficulty in assessing damage was that the damage was so inextricably intertwined with the on-going life-struggle of the people that it was nearly impossible to distinguish between disaster and everyday life. This raises an interesting question, because the Mauritanian case later resulted in the general conclusion that the disaster was considerably overestimated. Might OFDA consider suggesting, in the future, that if a disaster cannot be clearly defined, then it is likely to be only a minor extension of routine struggles rather than a signficant disaster?

Information: Use and Dissemination

The use made of damage assessments are fall into three categories.

First, damage assessments are used directly by OFDA in determining U.S. involvement in the disaster. This is the primary importance of OFDA and OFDA sponsored assessments. In general, this purpose was well served and presented few problems in the 31 assessments reviewed. No evidence was uncovered that the dissemination of any information generated by OFDA was controlled or suppressed.

Second, damage assessments are used by the victim government to seek relief from the international community and plan its own relief efforts. In a few disasters, the victim government was plainly incapable of utilizing the outside expert's damage information provided from various sources. No reliable information collection and dissemination point was created. As a result, both donors and the government were unclear as to needs unmet and those fulfilled by others. In some cases, the Guatemala earthquake for example, this failure was the result of an undermanned, underskilled relief coordinating organization which was swamped by the scope of the disaster. In other cases, the government intentionally discouraged a focal point for donor coordination, preferring to deal individually with donors. In either case, the usefulness of damage assessments was impaired.

A RECOMMENDATION FROM LESSONS LEARNED

For any disaster there needs to be a formally established information center or point of contact for processing damage assessments and assistance offered. The center should make available to donors all assessments of damage and needs. The major participants should agree in advance who has primary responsibility for information coordination, the host government, UNDRO, LORCS, OFDA, AID Mission, etc.

In two different disasters it was felt that UNDRO should assume this responsibility. In most disasters, governments were quite capable of correctly using and disseminating damage assessment information. In these cases, a specific

recommendation about photo reconnaissance, which could be generalized to other damage assessment techniques, is worth noting:

When providing photo reconnaissance, just turn the photos over to the host government without forcing on it our recommendations about what is needed.

Third, damage assessments are used as public relations tools to attract attention to the disaster both within the victim country and among the international donors.

In contrast to this last use of damage assessments are three instances in which governments intentionally limited the dissemination of damage information. The first of these was the Romania earthquake where several days passed before the government provided significant information. The second was the Andhra cyclone when the government of India provided little information to the donor community. The damage report was not released to the U.N. Disaster Relief Organization and the official report following a ministerial team visit to the site remained confidential. The third occurred amid the Ethiopian civil war and drought when the government attempted to censor the report of the Multi-Donor Mission.

Timeliness of Damage Assessment

Identifying "the most appropriate time" to conduct a damage assessment is an impossible task. Each event dictates what form damage assessment should take. In this review, however,three different themes relating to timeliness in assessment were uncovered. They are presented below to illustrate the range of problems which are likely to face those deciding whether to make a damage assessment with experts from Washington.

Too Late

In at least three different disasters, the TDY damage assessment official, both from OFDA and an expert sponsored by OFDA, arrived too late to really make a contribution toward assessing damage to provide immediate emergency relief. Ten days after impact, one evaluator stated, was poor response.

Too Soon

In two occasions reviewed, OFDA attempted to anticipate a coming disaster by conducting a damage assessment prior to actual declaration of disaster. In Mauritania, the near-constant drought conditions prompted an early damage assessment, the result of which was a broad-based feeling that trouble would be coming. However, too little solid information was available to actually initiate a pre-impact response.

In Uganda (and again in Equatorial Guinea, although not reviewed in this report), OFDA sent a damage assessment officer quite soon after the fall of the government. In Uganda, this resulted in the damage assessment being conducted amid a still-fluid situation during which the government changed. Previously contacted officials disappeared and little reliable information was gathered from the government.

Too Long

Two cases illustrate the need for promptness once the assessment is undertaken. Following an earthquake, obviously damaged buildings must be quickly assessed. If they are so structurally damaged as to be vulnerable to aftershocks, they must be torn down immediately. Considerably more time is available for repairable buildings and those which have deeper structural damage. Thus, the focus in the immediate aftermath of earthquake must be on potentially dangerous buildings. Promptness also was criticized in the Mauritania drought. Three separate OFDA TDYs plus two Multi-Donor Missions acted to stretch out the assessment period to such an extent that the whole program of assistance was delayed.

A RECOMMENDATION FROM LESSONS LEARNED:

If we cannot rely on the judgement of one individual, then we should send a team to reach a consensus decision rather than sending assessors one after the other. This is especially true when the relative bureaucratic/administrative authority of the assessors differs.

Logistics In-Country

The logistical problems of damage assessment, while obviously considerable, were not a main topic of concern to the evaluators of damage assessment on The Lessons Learned System. It was often difficult to get transportation, (gasoline shortages, helicopter pilots with broken legs, etc.),but assessment personnel always seemed to get the job done.

Only one item raises an important question in regard to logistics. During the Ebola virus epidemic in Zaire, Alitalia airline refused to carry the diagnostic specimens to Europe and the U.S. for examination. Time was lost while other arrangements were made. What advance preparations, agreements, assurances, etc. could be made with airlines to prevent the repetition of this difficulty?

Important Attributes of Damage Assessors

Several qualities which were found to be important in at least one of the damage assessments reviewed are reported below. These are attributes which increased the capability of an individual or an assessment team to conduct a comprehensive assessment.

An essential requirement of an on-the-ground assessment of human conditions is language capability.

High-quality information was obtained in Guatemala with minimal difficulty because the DAST was accompanied by a NCO from the Guatemalan army.

The use of air photo reconnaissance, and especially Landsat photographs, is dependent on weather conditions, particularly cloud cover. As a result, in cyclones it is necessary to wait until after the storm has cleared to assess impact.

It is important to be able to identify the names of key officials in the damaged infrastructure (utilities, construction, transportation, etc.) in order to begin assessment quickly.

DAST and other assessment teams must be flexible in make-up. The addition of a water specialist, or other expert, as conditions require could often have resulted in a more complete damage assessment. In the Guatemala earthquake, medical expertise on the DAST would have better evaluated the orthopedic needs and perhaps altered the field hospital request.

A RECOMMENDATION FROM LESSONS LEARNED:

Better early information could have been provided with the addition of specialists in the DAST team to refine the focus of damage and needs assessments. DOD and OFDA should consider creating a flexible DAST structure which would permit the addition of specific types of assessment personnel based on anticipated needs from past disaster experiences.

Lessons Learned

AERIAL DAMAGE ASSESSMENT

Overview

Aerial damage assessment consists of visual surveillance and, the more frequently used, photo reconnaissance. The latter is undertaken with both aircraft and remote sensing satellites (especially LANDSAT). One generally agreed upon statement summarizes aerial assessment experience: A tremendous resource which, in its several applications, has not fully served the needs of OFDA.

Management Roundtable Findings

The initial point agreed upon was that OFDA needs to set forth its objectives for aerial surveillance in order to determine whether the criticisms most often leveled (not timely, not available or useful in emergency decisions) are valid.

In suggesting an outline for such objectives, participants noted three audiences for, or users of, aerial assessments. Each user has different objectives for using aerial assessments.

OFDA: Ascertain promptly the scope of damage in order to anticipate the nature of aid requests forthcoming; disseminate damage information to other interested donors.

HOST GOVERNMENT: Locate isolated villages unable to communicate their losses and identify undamaged resources which can be applied to assistance.

AID DEVELOPMENT PROGRAMS: Plan reconstruction assistance in coordination with ongoing or new development programs.

Assuming the validity of these objectives, participants identified key differences in the potential for visual surveillance and photo reconnaissance to fulfill the emergency assistance objectives defined for OFDA.

Photo Reconnaissance

From the Guatemala earthquake in 1976 through the Fiji cyclone in 1979, photo reconnaissance has not served the needs of OFDA for timely, anticipatory information. Photo reconnaissance simply has not been deployed, implemented, and evaluated promptly enough. AID development program and host country officials concerned with reconstruction planning generally laud photo reconnaissance. Political interests have been served by the use photo reconnaissance as a "flashy" response. However, if OFDA is

the sponsor of photo reconnaissance for the purpose of information, then the Office has not obtained intended benefits.

Two views on this emerged among participants:

1. Photo reconnaissance should be a development activity and not an OFDA emergency response. Without the urgency of an emergency response, AID should fully explore in-country resources which, in some cases, were found to exist after OFDA funding.

2. The failure of photo reconnaissance is not inherent in the technology but in the way OFDA uses the technology. Emergency use of photo reconnaissance should not be discarded; rather, it should be improved to serve OFDA needs fully.

Visual Surveillance

Visual surveys are a seldom used resource which, several participants felt, may offer considerable benefit to OFDA at low cost. The following considerations in support of this view arose at the roundtable.

1. Most embassies have routine access to aircraft which, by prearrangement, could be used in emergency by AID personnel to fly over the disaster scene at the earliest opportunity.

2. Cost for such overflight would probably be on the order of a few hundred dollars which could easily be covered from the Ambassador's account.

3. With basic observation skills, and perhaps some training/guidelines provided by OFDA as to what to look for in different types of disaster, Mission personnel might provide clear definition of the scope of disaster and some anticipation of aid requests.

4. Location of isolated communities could be transmitted to the host government promptly.

5. The brief overflight could indicate the value of a more detailed land or photo reconnaissance assessment to follow.

Summary

In wide scale disasters in which damages are visible from the air, visual damage assessments are more likely to fulfill the needs of OFDA with less investment in improving technology or procedures than photo reconnaissance.

With The Lessons Learned System reports and the Management Roundtable of 12/11/79 as a beginning, effort should be made to set a policy on objectives of OFDA use of aerial assessments. Subsequently, a set of procedural refinements must be made to balance OFDA objectives with use of visual surveillance and photo reconnaissance.

INFORMATION FOLLOWING A DISASTER

Overview

The Management Roundtable is designed to assess and reduce the volume of information about particular disasters in The Lessons Learned System into a systematic set of issues, problems, or opportunities. These are set forth in a working paper which is the subject of discussion by OFDA staff. This paper is a summary of the discussions and working paper on "Information Following A Disaster." It identifies several specific individual points made during the Roundtable plus one general recommendation that emerged from discussion.

A Recommendation

The main recommendation to come out of the Management Roundtable was for a package of checklists of information OFDA has found useful in past disasters. Shortly after a disaster strike, or if possible after an alert or warning was given, checklists would be selected to be sent to the mission. The purpose of the checklists is to give the mission an outline of information that (a) they may find useful to have and (b) OFDA would like to have.

The key to the success of this project, according to Roundtable participants, was to let the mission know what OFDA needs without insulting the intelligence of the mission. Also, OFDA must make clear in the opening part of the cable that this is a checklist, not a requirement. That it is an opportunity to be fully informed, not a burden. In general, the cable should take the position that OFDA is certain of the usefulness of having this information, but if getting it is a bother, let us know.

The cable should ask for information in the mission's own words and not be a format. It should suggest that these things may not all be available initially, but that they are things to keep in mind, i.e., a checklist of items that the mission wouldn't want to miss.

The checklists should be tailored to a set of categories or topics. The Lessons Learned System could be tapped to identify what happens in a disaster of a particular type. Checklists of useful information could be developed for commodities or services which may be required. For example, the cable could introduce the following:

In recent earthquakes, OFDA has found an obvious need for shelter. In determining whether, what type, and how much shelter is necessary, we have found the following kinds of information useful. You might want to be on the lookout for answers to the questions in the coming days. As you can fill in the details, let us know in a cable.

- o What kind of homes did victims occupy before the disaster?
- o Are materials available for victims to rebuild homes?
- o What weather conditions exist and are anticipated?
- o Are people going to community shelters to to homes of relatives or friends?
- o etc.

One word of caution on the checklists was raised: They should be lists of information necessary and should not be seen by the mission as a relief "wish list." The checklists should be used to assess need, not generate requests stemming from the presumed available of resources suggested by the checklist cable.

Specific Points

The information preferred by some staff members is quantitative. Numbers build confidence in conclusions. This preference is strengthened by the AID Handbook which stresses numbers.

This was contrasted by a strong feeling that OFDA must recognize and be willing to accept that there is sometimes no good information. The mission, similarly, must be ready to acknowledge that there is no information. Because quantitative data is hardest of all to develop in the aftermath of a disaster, these two expressions sharply illustrate the ambivalence of OFDA staff members over information.

In general, there is greater confidence in a country when detailed information is provided. Several factors can strengthen this confidence:

- o the experience of the mission director, and OFDA's familiarity with him or her;
- o a good working relationship between mission and country, and OFDA's belief that the government is backing up the mission;

- the capacity of the country itself, and OFDA's assumption that a country that is managing development well will manage the disaster well and provide better information because it has baseline statistics to measure disaster impact against.

Confidence in the information coming from a country is immeasurably strengthened when an OFDA TDY can get the feeling of whether a damage assessment was done in a legitimate manner.

Some discussion took place about developing an "Information Reliability Index" for each country. Simply, this tool was proposed as a way to answer the question: should OFDA implicitly trust data or look closely at it. While this idea was rejected, the categories of an index may still be valid indicators of expected confidence: the mission director, the management capacity of the country, and the desk officer's estimate of reliability.

Some questioned whether information was of highest priority in the very early stages of disaster. Relief comes in stages; the big money comes later. Perhaps the greatest need for information is not initially, when the US can do less, than it is during the transition from the immediate life-saving response period to the medium-term public welfare period. This approach is one which recognizes that the US cannot provide extraordinary levels of response in less than a week. The acceptance of this view is a matter for policy-makers.

Following up on this concern about setting sufficient quantities of high-quality immediate information as a goal was the view that high-pressured statements of immediate information needs by OFDA might well <u>create a crisis</u>. OFDA should avoid putting the mission in a position where it has to "pull the trigger."

THE LESSONS LEARNED SYSTEM ONE PAGER

RELATIONS WITH OTHER U.S. AGENCIES OPERATING OVERSEAS IN THE DISASTER AREA

Following a disaster a variety of U.S. agencies and organizations engage in a variety of activities at the disaster scene. At the Management Roundtable on "Getting Ready For The Next Major Earthquake," the OFDA staff grouped these agencies and organizations into two types:

- o Colleague agencies---those helping and participating in the relief effort, including voluntary agencies, the Department of Defense, etc.

- o Knowledge-seeking agencies---those at the disaster site for a legitimate purpose in the expansion of knowledge, but without a role in the actual relief effort. These agencies included the National Academy of Sciences, the U.S. Geological Survey, the National Bureau of Standards, and the National Science Foundtation.

The key question raised about these organizations was: Do they present a logistical problem during a crisis in their knowledge collection efforts?

According to one OFDA staff member, the mandate of OFDA is for relief. Does the mandate support preparedness during times of crisis?

The answer to this question was, uniformly, yes. But the question remained, Can such knowledge-seeking efforts <u>dilute</u> relief efforts?

OFDA staff felt that a danger of such dilution did exist. However, it was carefully guarded against. At no time, one Roundtable participant said, were any of these agencies in a position to jeopardize relief. In any contact with them, there is never any promise of OFDA logistical support. Some commented that this needs to be fully communicated to the field, because whenever a U.S. scientist from a reputable organization appears, there can be a tendancy for the Mission to want to try to help out.

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UNSOLICITED AID AND RELATIONS WITH THE STATES

Unsolicited aid consists of donations made by individuals or organizations as a result of their own perceptions of needs, not as a result of solicitations made by the U.S. Government. Unsolicited aid has been a major problem in some disasters, resulting in unnecessary transport costs, wasted goods, provision of useless supplies, and disruption of legitimate relief shipments. The incentive for unsolicited aid often comes from the efforts of voluntary agencies to inspire their constituency. Another source are the consulates and other representatives of the disaster stricken government in the U.S. who promote aid as an expression of friendship. A third source is mass media coverage of the event which arouses ethnic linkages and cultural ties to the troubled area. All three sources combine to produce a spontaneous outpouring of unsolicited goods and services.

The problem with unsolicited aid is, in brief, that a very high percentage of it is unnecessary and unneeded. And in order to identify the few articles that are necessary and needed is far more costly than the articles merit.

OFDA, following the Guatemala earthquake in 1976, created a system of foreign disaster relief liaisons in the offices of the Governors of the states. Part of the Management Roundtable on "Getting Ready For The Next Major Earthquake" dealt with the status and contribution of this system toward stemming unsolicited aid.

Two focal points exist as alternatives for contact at the state level: the Governor and the director of the state emergency office. The state emergency office performs many of the tasks that OFDA does, and therefore might be a natural link. However, OFDA staff members felt that the Governor offered the best point of contacts. Let him or her then identify the operating staff officer.

There was a general feeling that a strong approach had to be taken on this problem. First, every effort must be made to stop unsolicited aid through these links to the state. Second, if unsolicited aid still accumulated in the state, OFDA should make clear that it was the responsibility of the state government.

A simple approach to this has been taken in the past: Make it absolutely clear that OFDA would not reimburse for anything that was not requested. The only problem found in this approach was that some voluntary agencies were able to circumvent it by obtaining not only a gift of goods but also the donation of transportation.

A concerted plan of attack on unsolicited aid has been developed and proven in a few recent disasters. It consists of direct contact through letter and telegram to :

- o Governors
- o Consulates
- o Congress
- o Voluntary agencies
- o Mass media

The thrust of the message is: Here are guidelines to be followed when describing the needs and potential aid resources available following a disaster. In general, they are simple: Make a cash contribution to one of the following voluntary agencies. Cash will permit the agency to provide the most appropriate form of aid and will better serve the victim's needs than any other form of donation.

THE LESSONS LEARNED SYSTEM ONE PAGER

THE SELF-HELP INCENTIVE OF FOREIGN DISASTER ASSISTANCE

The Management Roundtable discussions focused on individual self-help incentives. It was felt that more was to be gained in developing methods in foreign assistance that would encourage, and provide skills and resources for, individuals to help themselves than could be gained by encouraging governments to be self-reliant and not seek foreign aid. This approach was chosen because of the difficulty in generalizing about the varied countries in which OFDA deals. Specifically, the social and governmental structures vary considerably concerning allowances for decentralized initiative. There are, it was generally agreed, very few different strategies that can be used to impact on improved self-help in a centralized government.

Management Roundtable Findings

A continuum exists between self-help and dependency. On the side of self-help lies individual initiative and self-reliance. On the side of dependency lie relief camps.

The foreign disaster assistance programming efforts, the OFDA staff felt, should take every opportunity to create support for self-reliance. These efforts include those with political, symbolic, and humanitarian goals. The objective of all such acts, in the words of one participant, is to "maximize self-reliance."

As defined by one OFDA staff member, "Self-help in the ideal would permit permit individual initiative and the carrying out of ideal, culturally adapted relief."

Among the cautions and the questions raised in the Management Roundtable discussions were the following.

Dependencies. Seeds, fertilizers, insecticides all act to create a new form of economy within a country. OFDA, to fulfill the self-help incentive, should be asking: What kind of new economy are we creating in a country that was recently self-sufficient?

Expectations. OFDA staffers felt that it is bad to create expectations that will force a government to do something to support people's perceived needs. Dominica, prior to Hurricane David, received only poor quality wood from commercial suppliers. Foreign donors provided good quality wood. Therefore, now new demands for better wood exist.

Learning. In Nicaragua and Guatemala examples abounded on the benefits of instruction in improving self-reliance. In Nicaragua, foremen were provided who offered guidance as people built their own homes. In Guatemala, foremen again taught improved construction techniques to villagers as part of an educational program associated with roofing distribution. In both cases, aid was coupled with educations as a motivation for self-help in both the short- and long-term.

Alternatives. Sometimes a choice of receiving foreign assistance is made in spite of a reasonable alternative. The alternative may well be somewhat harder, in that it requires greater organizational or logistical support on the part of the government or people; however, the alternative may yield a net increase in self-reliance. In Fiji, according to one OFDA participant, the rehabilitation homes were put up by families, themselves. This was a good example of self-help. However, the government provided materials and supplies when palm trees felled in the storm could easily have been used . . . given the logistical support of a sawmill. Palm wood cut up could have satisfied, domestically, a large part of the reconstruction wood needs. But, foreign aid was an easier route to take.

Follow-up. Almost as proof of the perversity of human nature, it seems that the dependencies developed in the short period following a disaster are difficult to break while the positive habits resulting from aid are easily forgotten. A new form of seed introduced into Nicaragua was given as an example of long-term benefit offered by foreign aid that could increase self-reliance. The new seeds taught people, for the first time, the possibility of two growing seasons in a year. This lessons, to be continued, required encouragement, follow-up, and continuing support for the seeds a a commodity in order for the long-term benefits to appear. Whether the government will make the commodity commitment or the people will take the follow-up efforts remains to be seen.

In summary, self-help incentives can be found in the form and substance of foreign disaster relief. As one OFDA staff member suggested, perhaps "we should send the motivators, not aid."

THE LESSONS LEARNED SYSTEM ONE PAGER

EMERGENCY MEDICAL AND HEALTH OPERATIONS

Emergency medical and health operations were discussed at a Management Roundtable session to examine possible parallels and lessons to be drawn from efforts in those areas for other commodities and services provided by OFDA.

Three characteristics of emergency medical and health were suggested as possible models, or goals, for improving other assistance efforts. They were:

- o Credibility of medical emergency efforts is great in many developing countries because of the prior, frequent contact between U.S. medical agencies, notably the Center for Disease Control, and developing countries. This credibility, established through training programs and proven abilities in the smallpox eradication campaign, has the desirable result of allowing quite easy access for U.S. medical personnel during an epidemic or other medical emergency.

- o Supply, delivery, and distribution of medical supplies suffer from many of the same problems as other commodities. Some lessons are available from the good working relationships established with drug manufacturers and airlines, each of which have established, with cooperation from OFDA, their own emergency protocols to speed supply and delivery.

- o Capabilities within the disaster-stricken country are a third potential lesson from medical efforts for other commodities or services. Through training, equipment improvements, and increased baseline knowledge of conditions in the developing countries, medical and health emergencies start from a higher level of competency than some other assistance efforts. Understanding conditions underlying epidemics and the ability to conduct an epidemiological investigation are but two examples of how greater capabilities in the developing country make foreign assistance and addition to existing skills rather than a substitution for totally lacking capabilities.

The OFDA staff identified parallels for two of the three potential lesson areas, and highlighted some specific examples of how other commodities and services could gain from the medical examples.

For the credibility of medical emergency efforts, the general feeling was that there is no substitute for effective performance. To some extent,

our provision of helicopters and other dramatic forms of quasi-military assistance suggests such performance. In developing this aura of effective performance, lessons from the efforts of the Center for Disease Control include:

- o Being understated rather than overstated;
- o Having field-seasoned professionals;
- o Knowing how to improvise (rather than military, for example, that travels with everything for contingencies);
- o Being practical (again in contrast to military that, according to OFDA staffers, has no cost considerations).

For the increased capabilities within the disaster-stricken country, the OFDA staff drew on its own preparedness experiences involving direct technical assistance and disaster preparedness seminars. In general, seminars were found to provide effective training that should lead to an improved capability, just as CDC training programs have in the medical field. Follow-up, however, is a key problem for OFDA. Suggested by the staff as points to consider were:

- o Monitoring past seminar trainees to keep track of their changing positions in the government;
- o Follow-up contact to the seminars as a form of training carry-over;
- o To carry out this contact, a newsletter or other form of regular exchange in addition to routine OFDA contact;
- o The development, through such contact, of an overseas network of experts in a variety of subject areas.

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MISSION DISASTER RELIEF OFFICER

The origin of discussion on the role of the Mission Disaster Relief Officer (MDRO) is found in the fact that MDROs are so seldom mentioned in the nearly 150 disasters reviewed at the date of the Management Roundtable. As a result, to identify what was intended for the MDRO in working with OFDA, an examination of the AID Handbook was made in order to extract a"job description" for the MDRO. In the Handbook the single statement of qualifications for a MDRO is that the person "should be sufficiently senior to participate in Mission Policy Matters." A summary of the tasks specifically assigned to the MDRO was presented to the Management Roundtable with the question: Is this what you want done by an MDRO?

1. Knows where Mission Disaster Relief Plan is kept.
2. Activates Mission Disaster Relief Team.
3. Sets up a command center.
4. Informs team of any changes to Mission Disaster Relief Plan.
5. Coordinates all operational, logistic, and supporting elements of relief operation--integrates military into overall relief.
6. Sends circular cable to OFDA requesting assistance.
7. Replies to offers of assistance.
8. Selects (with CM) a Mission Disaster Relief Team.
9. Defines assignments in the Relief Plan.
10. Gathers lists of in-country material resources.
11. Provides changes for update of County Profile.

Management Roundtable Findings

It was determined after considerable discussion that the role of the MDRO is to be "liaison or contact point in the Mission." The specific responsibilities outlined in the AID Handbook should be treated as responsibilities for the Mission, not for the MDRO. The MDRO's actual responsibilities are less than those defined above. It is the Ambassador and the Mission Director who take charge, who make the major decisions implied some of the parts of the "job description" above.

Given that the top decision-makers will take charge in a disaster, the question was raised whether it misplaces both authority and expectations to assign to the MDRO many of the above tasks when, in fact, others make the major decisions after a disaster? Should, perhaps, the MDRO be the Mission Disaster Preparedness Officer, recognizing that getting everything ready for others to orchestrate relief may be the MDRO's most important contribution?

The answer was a resounding no. The MDRO is expected to have relief and rehabilitation duties.

What, then, is the core of the dilemma with the MDRO?

According to OFDA staff present at the Management Roundtable, the facts of life about the MDRO are that he or she handles the small duties and the big decisions are made by others.

The goal of improving an MDRO---and in doing so improving the disaster response of the Mission---would be fulfilled by improving the relationship between OFDA and the Mission as a whole. According to the Management Roundtable, there is no continuing contact with the MDRO, except on the preparedness side of OFDA through technical assistance.

OFDA, then, has the job of "nurturing a dialogue," as one OFDA staffer put it. In doing so, there is the continuing problem of a change of staff and how to maintain a relationship across time when a sense of disaster threat varies. Everyone agreed that the key, here, is "immediate threat." No matter who is the MDRO, when there is a threat, "the job gets done."

Without a threat, nothing will happen to prepare the Mission for an unlikely disaster.

Thus, the Management Roundtable returned to a question of information flow: Continuing contact. Maintaining a relationship. Writing to the MDRO alerting to the fact that hurricane season approaches.

All these things summed, in the minds of OFDA staff, to the fact that OFDA doesn't <u>advertise</u>. A way to alter, and keep in the minds of MDROs and Mission Directors (and, some even said, Members of Congress), is essential to a continuing harmonious relationship with those in the Missions who fulfill many of the tasks OFDA sets in motion from Washington.