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OFDA RESPONSE TO THE FLORES, INDONESIA, EARTHQUAKE/TSUNAMI DISASTER OF 1992: AN EVALUATION

By

Brad Michaels

David Scott Luther

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PREFACE

This evaluation report, while intended to strengthen future responses, does not capture the human dimensions operating within a disaster environment, in particular:

The benefits of hindsight. It must be recognized that disaster response decisions are made in a "crisis" environment, with considerable pressure to act, and act rapidly. Furthermore, decisions are made based upon the best information available at the time, given the logistical constraints of reaching the affected areas.

The dedication of persons responding. In addition to Advisors assisting in the affected areas, OFDA and other USAID officers were communicating from home and at night (because of the twelve hour time differences), and over Christmas and the New Year.

Finally, the tragedy faced by both the victims and the survivors. Survivors' descriptions of their experiences are enduring: feeling the tremors and seeing the waters recede, and running up the hillsides in anticipation of the tsunamis; returning to the affected areas, where in places, only the tops of palm trees were visible above the water; being unable to return to the small islands swept over by the tsunamis because of the concern over disease associated with the number of corpses.

EXECUTIVE SUMMARY

INTRODUCTION

On December 13, 1992, at 13:29 local time, an earthquake of 6.8 magnitude struck near the Indonesian island of Flores, generating land slides and a 26.2-meter-high tsunami that swept over several outlying islands. More than 2,000 people died, approximately 25,383 homes were damaged, and between 85,000 to 90,000 people were left homeless. Material damages were estimated to exceed $100 million.

The stated purpose of OFDA's response to the disaster was to save lives. In addition to sending a Disaster Advisor to Flores (three times) to conduct an initial needs assessment, monitor distribution of commodities, and report on end results, OFDA procured and delivered 500 rolls of plastic sheeting for emergency shelter. Total OFDA assistance came to $333,000.00.

OFDA's response strategy targeted saving lives in Flores by sheltering the affected population from upcoming seasonal rains and winds. The goal of saving lives stated clearly and unambiguously because OFDA had to demonstrate that the need to respond to Flores (and to all other disasters at that point in time) justified the potential requirement of shifting limited OFDA funds from competing needs in Bosnia and Somalia.

MAJOR FINDINGS

The evaluation shows that, as a result of OFDA's response actions, the unstated OFDA goal of "reducing human suffering" appeared to have been achieved. The stated goal of saving lives, however, was no met. This occurred not because of a lack of performance, but because of the strategy definition itself: it is not possible to demonstrate that providing shelter in temperate climates such as Flores "saves lives".

<u>OFDA Technical Assistance and Material Inputs</u> The technical assistance OFDA provided was timely and met real requirements of both the Government of Indonesia (GOI) and USAID/Jakarta. In particular, the OFDA Advisor played a key role in assessing shelter needs and monitoring the distribution of the OFDA's plastic sheeting. His reporting provided an instructive record of end use not often available from OFDA or other disaster response agencies.

OFDA was efficient and cost-effective in providing 500 rolls of plastic sheeting, which arrived in Jakarta (by commercial aircraft) three days after the request from USAID/Jakarta. However, delays in decision making and distribution ultimately affected end use, as the material was not distributed to the affected populations until three to six weeks after the disaster occurred, too late to meet the victims' first

emergency shelter need. (Usually sheeting must be delivered to target populations within three to five days after a disaster in order to meet the first emergency shelter need.)

End Use and Impact of Plastic Sheeting Once the plastic sheeting reached the victims, it met a real need. The sheeting significantly protected the affected populations from heavy rains and winds until they were able to establish more permanent shelter. In fact, the recipients requested more sheeting after the harsh weather destroyed early supplies of sheeting and other roofing materials.

If OFDA's intention was to meet the intermediate shelter needs of the population, then the delays that occurred were not critical. However, meeting the emergency needs would have required local purchase of the sheeting (even a limited amount) to ensure that victims received it within the short, three-to-five-day emergency shelter period.

A significant issue arose over the intended versus the actual end use of the sheeting. OFDA initially stated that the sheeting was intended for family dwellings, not communal structures such as schools, government buildings, churches, or mosques. However, in response to a request by Indonesian officials and community leaders that the sheeting be used for communal buildings, the OFDA Advisor negotiated an agreement allowing 30 percent of the sheeting to be used for that purpose. Yet the Regional Advisor reported that despite the agreement, of the cases observed or reported on, only 45 percent was used to shelter families.

C. RECOMMENDATIONS

1. Develop a Strategic Plan that includes Regional Strategic Plans that support the overall OFDA strategy. OFDA should develop coherent strategies that clearly state what is achievable and within OFDA's manageable interest.

2. Strengthen the targeting of the response by forecasting the strategy's impact. This will help establish cutoff points for determining whether specific needs can be met given timing requirements and logistical constraints. Particular emphasis should be placed upon what can be delivered to the affected population within the short three-to-five-day window of the emergency shelter period.

3. Strengthen the technical assistance OFDA Advisors provide by: (a) using the $25,000 Disaster Fund to support technical assistance; (b) providing a multisectoral assessment team, where possible, to assess shelter, water, and food needs, and (c) expanding the scope of OFDA Advisors.

4. Upgrade the role and training of Mission Disaster Relief Officers (MDROs). The position of MDRO's must be upgraded to allow for responses based on the level of readiness required, rather than on an ad hoc basis.

5. Enhance the potential impact and likelihood of intended end use of material by: (a) expanding the determination/definition of "appropriate end use," (b) targeting and reporting on end use by the neediest victims, (c) broadening potential impact by providing more than one material input, and (d) cutting plastic sheeting to smaller sizes prior to distribution.

6. Allow some flexibility in determining appropriate end use of donated materials; both OFDA on-site Advisors and local beneficiaries should have input on this matter. Because disasters are dynamic, OFDA must remain flexible, relying as it does on reports on changing conditions from its on-site teams.

D. LESSONS LEARNED

1. Pressure exists--particularly when competition over OFDA resources is great--to develop response strategies that commit OFDA to demonstrate achievement at the highest level of impact: saving lives. Furthermore, delays are likely in decision-making, given that OFDA will try to ensure that its response meets the standard to which it is being held. OFDA should resist such pressures and justify its response strategies in clear terms regarding what it can be held accountable for achieving through such strategies, such as reducing human suffering, which has clear merit.

2. Rapid response is constrained by the need to demonstrate that the response merits resources in competition with disasters of the magnitude of Bosnia and Somalia. Due to this constraint, many families in Indonesia had met their emergency and intermediate shelter needs on their own, leaving as the outstanding need the sheltering of community structures. This result compromised OFDA's goal of "saving lives," which would have justified comparable assistance to that used for Bosnia and Somalia.

3. It is possible to influence the distribution of donated materials, but difficult, if not impossible, to control their end use. While it is likely that OFDA's on-site presence influenced the resulting pattern of distribution, it was not possible to completely control end use, since local choices differed from what OFDA intended. In this instance, OFDA was the sole donor influencing distribution.

4. By limiting its focus to response efforts, OFDA often misses opportunities to take advantage of local post-disaster commitment to strengthen disaster preparedness and mitigation. In the case of Flores, those opportunities centered around strengthening Mission and GOI preparedness, in addition to influencing reconstruction activities to include appropriate mitigation measures.

5. A limited USAID Mission disaster response capability influences the need for a greater level of assistance from OFDA (and in the success of OFDA's response strategy). According to Mission officers, *a high level of assistance from OFDA to the Mission was and will continue to be required* given that (a) the MDRO assignment experiences high rates of turnover; (b) institutionalized Mission disaster experience is limited to one, soon-to-retire Foreign Service National (FSN); and (c) the Mission depends on funds from OFDA for response.

6. A balance must be struck between appearing to be rapidly responsive versus the need to establish "cutoff points" that focus response strategies on what can be delivered within the actual emergency period. In the Flores disaster, OFDA chose not to respond until an on-site assessment was conducted. As a result, the procured plastic sheeting did not arrive on-site during the emergency shelter period, and thus, met shelter needs only in the intermediate and long term.

7. Responding to countries that do not make international appeals for disaster assistance (such as Indonesia and India) requires heightened donor coordination to ensure that assistance strategies serve unmet rather than overlapping needs. As a result of Indonesia's policy, a greater level of coordination was required (but was unavailable) for matching donor contributions with unmet needs. As an example, the GOI and the United Nations Development Program required technical assistance in developing a standard grid for matching donor commitments of aid with locally assessed needs.

I. EVALUATION PURPOSE, METHODOLOGY AND LIMITATIONS

A. EVALUATION PURPOSE

The purpose of this evaluation is to learn lessons for strengthening future disaster response efforts. It is also intended that the evaluation report will serve the "institutional memory" for the Flores disaster. Finally, since the evaluation of disaster assistance is a new endeavor for OFDA, this evaluation seeks to assist in strengthening future response strategy, particularly by developing useful indicators of success.

B. EVALUATION METHODOLOGY

Program performance was assessed according to four dimensions: (1) the impact of OFDA's response strategy; (2) the appropriateness of the level of disaster assistance provided; (3) the efficiency and effectiveness of OFDA's delivery of technical assistance, funds, and commodities; and (4) the end use of the material inputs.

The evaluation methodology included the following elements: (1) a review of OFDA communications and reports that included situation reports, assessments, and actions taken; (2) site visit; (3) interviews with participants in the disaster response (AID/Washington, Bangkok, Jakarta, and Flores); and (4) interviews with the victims as end-users of OFDA assistance.

A USAID/Jakarta representative, who traveled with the evaluation team and assisted in the organization of the evaluation and English interpretation, knew the pre- and immediate post-disaster "baseline." This Mission representative, an FSN, had visited Flores at least once annually since 1972.

C. EVALUATION LIMITATIONS

The limitations of the methodology include the following - <u>language barriers</u>: The evaluation team had to rely on English translations of the respondents' Bhasa (Indonesian) replies; <u>OFDA's inexperience in evaluating its disaster responses</u> - OFDA and other disaster assistance agencies do not regularly evaluate the success of their response activities; therefore, the evaluation team had little prior methodology on which to rely, particularly regarding indicators of success. Also, as a result, persons interviewed were unfamiliar with the purpose and methodology of this evaluation. <u>Timing</u>: The evaluation was conducted almost two years after the disaster, therein limiting the observation of emergency shelter end use.

II. ORGANIZATION OF THE DISASTER RESPONSE

Economic Overview of Flores, Indonesia

The island of Flores, Indonesia is located in the province of East Nusa Tenggara, a small section of the Eastern Islands region of the country. With a land area of 47,389 square kilometers, the province occupies only 2% of the Indonesian geographical span, which stretches a distance equivalent to that from California to the Bahamas (The World Bank, Indonesia: Urban Public Infrastructure Services, September, 1993).

East Nusa Tenggara has a population of 3.3 million (out of Indonesia's total population of over 180 million), 88% of which resides in rural areas. Of these rural citizens, 45.6% are living at the poverty level, by far the most extreme figure among the Indonesian provinces, the remainder of which range from 1.3% to 34.9%. The province carries the lowest mean total expenditures in the country and has the highest number of persons living at the food poverty level. (The World Bank, September, 1993). Among the rural majority population, approximately one fifth are illiterate (The World Bank, Indonesia: Expenditures, Prices, & the Poor, August, 1993).

The chief income generator in Flores itself is agriculture, however, the world demand for its two largest cash crops, copra and coconut oil, is on the decline. Experiments with cocoa plants are presently in effect; authorities hope that this may become a replacement cash crop. There was a marginally profitable trade in tuna to Japan, but, unfortunately, most of the vessels and cold storage facilities assigned to this industry were destroyed in last year's earthquake/tsunami disaster. There is potential for other income generating prospects, but Flores has neither the physical, nor the entrepreneurial capital to pursue them effectively.

Access to public facilities is very limited for East Nusa Tenggara residents, especially concerning water and sanitation. The most common form of solid refuse disposal is private "heaping and burning"; waste water is drained openly, and with no receptacle. Toilet facilities are almost unheard of in the rural areas, and only accessible to half of the urban populace. Complaints of garbage odor and stagnant water are common in both rural and urban spots (The World Bank, September, 1993).

The situation in this poorest of Indonesian provinces is not as severe as the statistics mentioned earlier imply. The areas that still suffer most, like East Nusa Tenggara, are predominately rural. The severity of their plight may be exaggerated by their comparatively lower populations, upon which the above economic indicators are based. Indonesia has been steadily increasing economic growth and reducing poverty incidence since the 1970's (The World Bank, August, 1993).

A. Summary of Events and Assistance

In order to better grasp OFDA's response to the disaster, the following summary sequence of events is presented:

Day 0	=December 13, 1992: The earthquake/tsunami strikes;
Day 3-9	=December 16 to 22: An OFDA field team visits Flores to assess the situation;
Day 11	=December 24: USAID Mission receives authorization from OFDA/Washington that 500 rolls of the requested plastic sheeting should be shipped from the OFDA stockpile in Bangkok, Thailand;
Day 13-17	=December 26 to 30: The USAID team in Flores is charged with needs assessment;
Day 14	=December 27: The sheeting arrives in Jakarta from Bangkok;
Day 18	=December 31: The first portion of 80 rolls arrives by air at Maumere, Flores;
Day 19-29	=January 1 to 11, 1993: The OFDA field team visits the site a second time to provide emergency shelter distribution assistance;
Day 28-33	=January 10 to 15: A second local Mission team is sent to Flores for continued emergency shelter distribution assistance;
Day 29-35	=January 11 to 17: The remaining 420 rolls reached Flores, a month after the disaster occurred;
Day 71-72	=February 22 to 23: The U.S. Ambassador visits the island;
Day 73-78	=Late February: Local distribution is finalized;
Day 129-137	=April 20 to 28: OFDA makes a third visit to Flores this time to assess emergency shelter end use assessment.

On Saturday, December 13, 1992, at 13:29 local time, an earthquake of 6.8 magnitude struck near the Indonesian island of Flores, affecting the districts of Sikka, Ende, Flotim, and Ngada and generating a 26.2 meter-high tsunami that swept over several northern outlying islands. More than 2,000 people were killed. That same day, the United States Ambassador issued a Disaster Declaration that authorized the release of US$25,000 in Office of U.S. Foreign Disaster Assistance (OFDA) funds. The funds were given to the Department of Social Services of the Government of Indonesia (GOI), which is the operating arm of Bakornas, the national disaster relief coordinating committee.

The USAID Mission received initial assessment reports from the GOI in which housing was stated to be one of the priority needs of the affected population. Based on this information, the Mission sent a situation report to OFDA/Washington that, in turn, was transmitted to a housing specialist working with the Asian Disaster Preparedness Center (ADPC) in Bangkok on an OFDA-funded project, requesting his assistance.

On December 16, the housing specialist and a Mission FSN visited the disaster site. On December 18, the USS Dixon, on a previously scheduled call at the port of Denpasar, Bali, contributed to the GOI US$108,000 worth of medical and other supplies. These reached Flores on December 21.

The field assessment of the disaster by the OFDA Advisor and Mission FSN determined that the most pressing need was temporary shelter. An estimated 25,383 homes had been damaged, leaving between 85,000 to 90,000 people homeless; therefore, provision of plastic sheeting was determined to be the most appropriate solution. The Mission recommended that 500 rolls of plastic sheeting would meet most of the needs of the affected families, with the GOI and other donors meeting the rest.

OFDA funds cannot be used until the US Ambassador or Chief of Mission determines that the following conditions are met: (1) the disaster is of such a magnitude that it is beyond the host country's ability to respond adequately; (2) the host country desires assistance; and (3) it is in the interests of the USG to provide assistance. When these conditions are met, the Ambassador or Chief of Mission can request that OFDA funds be allocated for the disaster.

Having met at least two of the above conditions (#'s 1 and 3), on December 24, OFDA/Washington authorized the shipment of the requested plastic sheeting from its stockpile in Bangkok. The first portion of 80 rolls arrived by air at Maumere, Flores, on December 31. (The remaining 420 rolls reached Flores between January 11 and 17, 1993.) On January 1, 1993, the two USAID or OFDA-sponsored assessors undertook a second visit to Flores with the intention of developing a specific plan for the use of the plastic, as well as to train local groups in the design and construction of temporary shelters.

It should be noted that three separate official visits to the disaster site were undertaken by representatives of USAID and the U.S. Embassy, one of which included a high-visibility visit by the Ambassador.

The process that was used to organize OFDA's response activities was, in summary, the following:

1. The affected communities, through their leaders, reported the damages to their district capitals, these being Larantuka, Maumere, Ende, and Ngada. In each of these cities the "Satlaks," or local disaster relief coordinating committees, had been set up, which in turn sent situation reports to Bakornas at the national level in Jakarta.

2. Without making a direct appeal, Bakornas (the national-level coordinating disaster relief body) then communicated the needs to the UNDP Disaster Management Team, which served as a filter/focal point for many, though not all, international donors.

3. Most of the material assistance was provided to the GOI in Jakarta, which then shipped the supplies to the pooling area at the Maumere airport for local distribution by the Satlaks.

Although USAID coordinated closely with the GOI, OFDA made its initial assessment independent of local authorities. Additionally, the shipping of the plastic from Jakarta to Maumere was handled exclusively by the GOI, as was almost all distribution in Flores.

III. RESPONSE APPROPRIATENESS, EFFICIENCY, AND EFFECTIVENESS

A. OFDA Response Strategy

1. Goal and Purpose

The single stated goal of the Office of U.S. Foreign Disaster Assistance's response to the Flores disaster was to "save lives." No differentiation was made between establishing a nearer-term purpose, such as "reducing human suffering," that would contribute to the higher-level goal of saving lives.

2. Rationale

Decisions regarding the strategy for the Flores disaster were made in an environment of great competition for OFDA resources: First, conflicts in Bosnia and Somalia had reached critical and massive scales, and second, OFDA's reserved funds were momentarily low. As a result, OFDA decided that if it were to commit resources to Flores, it had to be demonstrated that those resources would "save lives." In the end, the need to protect the Flores victims from the upcoming season of rains and winds was used as a justification for contributing the plastic sheeting.

3. Impact

Evidence suggests that the USAID sheeting "reduced human suffering" by meeting a significant portion of victims' intermediate post-disaster shelter needs during seasonal rains and winds. It cannot be demonstrated that the sheeting saved lives; however, it is difficult to demonstrate that provision of shelter saves lives except in frigid temperatures, as in OFDA-supported relief activities in Angola (Barbieri, L. "Evaluation of the World Vision Emergency Program in Southern Angola, November 1990-February 1992," 1992).

B. Level of Disaster Assistance Provided

1. Quantification

The reported value of OFDA assistance to Flores was $333,000, principally for the procurement of the 500 rolls of plastic sheeting. Other United States assistance totaled $605,060 from USAID, the United States Navy, and private companies.

2. Appropriateness

The decision whether to respond to international disasters and at what level is guided

by both humanitarian and political considerations; assessment of political factors, however, is not within the scope of this evaluation. In judging appropriateness, in this case, it is instructive for comparative purposes, to examine prior OFDA responses to natural disasters of comparable magnitude, and the level of assistance other donors for provided to Flores. (See, Chart 1 and Table 1)

a. Comparative OFDA Disaster Responses by Cost and Fatalities

The level of OFDA assistance to the Flores earthquake/tsunami victims, in terms of persons affected, was compared with eight other disasters judged comparable on the above criteria (past OFDA responses and other donor assistance to Flores). Among these comparable cases, OFDA provided assistance ranging from approximately $200,000 to $500,000. Fatalities ranged from 9 to 2,080. Flores, with the highest number of fatalities in this group, had a comparable, if not slightly lower, per capita assistance.

b. Comparison of OFDA' Flores Response with That by Other Donors

Although OFDA's assistance is of primary concern in this evaluation, it did not stand alone. Many other agencies responded to the Flores disaster, as well. The Government of Japan was the largest contributor of cash, donating $1,000,000. The United States Government (USG) fell close behind, donating approximately $898,000 in cash, plastic sheeting, relief supplies, and technical support, as noted above. Particularly noteworthy was the assistance from the Government of Australia, which sent supplies directly to Maumere, rather than through Jakarta, allowing them to reach the victims more quickly than the supplies of any other donor. The Government of Indonesia (GOI) provided the transportation and distribution of supplies, as well as repair of housing and infrastructure. Several other governmental and nongovernmental organizations and individuals also provided supplies and transportation, including CARE International, Yayasan Pelita Swadaya, Dian Desa, Mr. Ibnu Sutowo, and the National Committee for Relief Assistance to Sikka District. (For more details about these contributors, see Annex I.)

C. OFDA's Inputs to the Flores Disaster Response

1. Summary of Inputs

a. Technical Assistance

OFDA provided an Advisor, who visited the island from his regional base in Bangkok. During his three short-term visits, which he conducted in the span of a year, the Advisor provided technical assistance to USAID/Jakarta by (1)

assessing the effects of the disaster, (2) monitoring the distribution of donated material, and (3) reporting on end results.

b. Funds and Commodities

OFDA donated $25,000 cash to the GOI through the U.S. Ambassador's Emergency Declaration Fund. Additionally, OFDA shipped 500 rolls of plastic sheeting (valued at $200,000 inclusive of transport) by commercial air to Jakarta from the Office's stockpile in Bangkok. USAID-funded NGOs provided foodstuffs and relief supplies from their stockpiles in Flores at the request of the USG at the value of $165,000. Finally, the USS Dixon, in port at the time of the disaster, provided medical supplies valued at $108,000.

2. Efficiency, Effectiveness, and Appropriateness

a. Technical Assistance

OFDA provided the technical assistance in an efficient manner, given the logistical constraint of limited accessibility to Flores (the Regional Advisor required four days to reach the disaster site). The results also showed that the technical assistance was effective: they met a clear need by providing expertise in disaster response in general, and specifically by assessing the presumed need for shelter.

A gap in the assessment may have occurred, because according to the Advisor, he (a disaster shelter specialist) was unable to test the need for potable water. During the evaluation, the investigators found that water cans indeed were a critical unmet need that OFDA could have responded to in the same shipment as that containing the sheeting from its Bangkok stockpile. (Needs varied by locality: shelter material was required more in urban areas; water cans were needed by villages dependent on power-pumped water).

The OFDA Advisor also played a key role in assisting the coordination of the response with the GOI and donors; he also served as the UNDHA response coordinator. (Nonetheless, a gap clearly existed in the coordination, as USAID/Jakarta representatives gave approval for distribution of the plastic for sheltering institutional structures in contrast to family dwellings.)

In addition, the Advisor served a critical function in monitoring the distribution of donated material; his reporting provides one of the best records OFDA has regarding the end results of a disaster response.

In sum, the technical assistance provided was appropriate for providing disaster management expertise that augmented rather than supplanted that available at the Mission.

b. Funds and Commodities

The $25,000 check was delivered in a timely way: one week elapsed between the disaster and the Ambassador's request for funds, although a full; OFDA provided the funds the same day.

OFDA's procurement of the plastic sheeting was also timely: within three days of the request, the sheeting was delivered to the GOI in Jakarta. However, critical gaps occurred in the provision of the plastic sheeting that constrained its delivery and thus its effectiveness in meeting its more immediate purpose. The first major delay of one week occurred between the date of the on-site Advisor's recommendation to send 500 rolls and the date USAID/Jakarta officially requested that OFDA send the sheeting. This one-week delay appeared to be affected by the following factors:

* The requirement to demonstrate the potential impact of "saving lives" in Flores, prior to committing funds, because of competition for OFDA resources in Somalia and Bosnia.

* The need, stressed by OFDA, for on-site assessment prior to commitment of material resources (particularly because of the need to demonstrate that lives were at risk).

* The concern for cost-effective procurement, which required determining local and regional availability and pricing prior to approving air shipment from the OFDA stockpile in Bangkok.

A second delay occurred in distribution when, once the sheeting was received in Jakarta, the GOI sent only 80 rolls of sheeting to Flores by air, shipping the remaining 420 by sea. Further unavoidable delays occurred in distribution from the central pooling of supplies on Flores because of the rupturing of Flores's limited and vulnerable infrastructure, particularly roads and bridges. By way of comparison, following the OFDA response to Hurricane Hugo, constraints to transportation also caused the majority of donated goods to be supplied to areas nearest the distribution centers, and the least to remote areas (Davis, C. with K. Farnsworth, "After-action Report of the Hurricane Hugo OFDA Disaster Relief Team," OFDA, 1990).

"The most important single fact which must be kept in mind in assessment and design of relief response for post-disaster shelter programs is that the initiative for providing emergency shelter and for permanent reconstruction is established within hours after the event and remains throughout the process with the disaster victims and their families...It would not be unusual to discover that by the end of the second or third day after a hurricane, as outside assessments are still being conducted, that the majority of the population has already accommodated itself for the medium term using what materials and tools were at hand...building and elaborating shelters in which they expect to reside for the next six to twelve months" (Gersony, Jackson, & Lynch, "Shelter Assessment and Program Guidelines for Hurricane Disasters in the Eastern Caribbean", 1982).

The phases of need described by Gersony, et al. for the Caribbean were found to be valid for Indonesia as well. According to Gersony, Jackson and Lynch (USAID/RDO/C), the emergency shelter phase typically occurs three to five days following a disaster (after which time the victims have met their own immediate needs). It must be reiterated that in this case, sheeting did not reach the Flores victims until after the emergency phase. However, the sheeting did meet a significant portion of the victims' intermediate needs, or those needs falling between the emergency period and a more permanent solution. In addition, the sheeting reached the victims in time to reduce suffering from seasonal rains and harsh winds that increased the level of need and led to local requests for more sheeting. As a result, the sheeting was an appropriate response. The above statement is made with the caveat that reporting on end use was only available for 200 of the 500 rolls distributed.

The Advisor was unclear as to the reasons for the delay of one week between the time he made his recommendation to procure the sheeting and the time the Mission officially requested it. The Advisor said he felt unable to convince the Mission of the urgency of the need for the response. Compounding matters, rather than responding to his recommendation from the field, the Mission waited until the Advisor returned to finalize the request to OFDA.

D. Intended End Use of Material Inputs

1. Rationale

OFDA intended the plastic sheeting to be used for family dwellings and not institutional structures such as government buildings, schools, mosques, or churches. The rationale for placing this condition on end use was that sheltering families would

have the greatest potential impact on OFDA's goal of saving lives and would serve the most needy.

2. Impact of the Intended End Use

According to the OFDA Advisor's final report, of the 200 rolls of plastic reported on as used, 45 percent was distributed to families, while 55 percent was provided for institutional and other structures. This breakdown of use occurred despite the fact that the OFDA Advisor had negotiated with local authorities that 70 percent of the sheeting be distributed to families and 30 percent to institutions. (On a side note, the evaluators observed some sheeting still in use almost two years post-disaster, and found the GOI's ambitious construction of 5,000 temporary units--to meet an estimated need of 17,000 units--still not completed, underscoring the Flores victims' continued intermediate shelter needs.)

Several factors contributed to the unintended end use of the plastic sheeting:

a. OFDA supplies sheeting in 30-meter rolls, rather than precut sheets.

This influenced end-users to treat the sheeting as appropriate for roofing of larger structures. The same result occurred in OFDA's response to Hurricane Hugo, which led the response team to recommend that OFDA provide precut sheeting in the future (Davis, C. with K. Farnsworth, OFDA,1990). While OFDA provided instructions on how to cut the sheeting, Flores villagers cut it to different sizes, further complicating standardized reporting on end use.

b. A delay of more than two weeks elapsed between the disaster and receipt of the sheeting by the affected communities. By that point, many families had already met their emergency and intermediate shelter needs, leaving the outstanding need of sheltering community structures.

c. Community priorities for end-use differed from the needs identified by OFDA. Communities wished to use the sheeting for community structures, especially schools, since exams were scheduled for the immediate future. Decision-making on end-use was clearly made at the local community level, where a priority was placed on reactivating community institutions seen as key to social cohesion.

d. Local authorities were given approval by on-site Mission representatives to use the sheeting for sheltering non-housing structures. This gap in disaster management required that the OFDA Advisor renegotiate with local authorities to permit 30 percent of the sheeting to be used for sheltering institutions.

E. Validity of Initial Assumptions Made By OFDA:

The OFDA response strategy was based on two main assumptions, which are discussed below.

Assumption 1: To achieve greatest impact, plastic sheeting should be supplied only to individual families.

This policy was based on the expectation that OFDA, and not the local government and/or community, can and should control distribution and end use of the plastic sheeting. This, however, was not the case with the Flores disaster. The GOI closely controlled the distribution and end use of the plastic sheeting. In the end, OFDA had limited influence over end use of the plastic sheeting.

It also must be noted that targeting only individual families may limit the potential impact. In some villages, disaster victims seek shelter in communal structures. And in previous disasters, such as in the response to Hurricane Hugo in the Caribbean, OFDA found it appropriate to provide a large proportion of its plastic sheeting to key institutions such as hospitals.

Finally, the implementation of this strategy proved problematic. It was not consistently adhered to by Mission personnel and created unnecessary conflicts between OFDA field personnel and local officials and communities.

Assumption 2: The GOI would deliver the USG supplies to the affected area efficiently.

This did not occur in Flores, where the GOI airshipped only 80 rolls of plastic sheeting and sent the remaining 420 rolls by sea. In future disasters, OFDA should look for alternatives to depending exclusively on the host country to efficiently deliver the supplies to the affected areas. Where possible, OFDA should provide local transport of supplies, as it did in the response to Hurricane Brett (1993) in the Caribbean.

F. Sustainability

1. After being used, many community leaders have instructed the villagers to store the plastic with the intention that they can use it in other disasters.

2. The provision of plastic will probably not have an effect on the disaster

preparedness of the local Satlaks.

G. Cost Effectiveness:

Approximately 1,400 to 1,500 families benefitted from the plastic sheeting at a cost of around $50 to $60 per family contrasted to $500 if a conventional tent had been used. The plastic was almost always used for roofing. Support structures and siding were provided by the recipients. In most cases the shelters were used for individual families though many structures were used for multi-families uses, usually by neighbors or relatives.

About 159 rolls were distributed to schools benefitting 475 classrooms and approximately 14,000 students. Of the religious facilities, about half were used for mosques and half for churches.

IV. RECOMMENDATIONS

1. Develop a Strategic Plan that includes Regional Strategic Plans that support the overall OFDA strategy.

OFDA should develop coherent strategies that clearly state what is achievable within its manageable interest. Otherwise, OFDA will be evaluated in terms of its stated response strategy of "saving lives." In the case of the Flores disaster, while it can be demonstrated that OFDA contributed to "reducing human suffering," it did not save lives. In addition, according to local NGOs that provided food aid, even that assistance did not appear to save lives, indicating that lives were not at risk in the aftermath of the disaster.

OFDA's strategic plan should also clarify what outputs can be achieved based on specific inputs and to what higher-level purposes and goals the outputs can be demonstrated to contribute. The input of plastic sheeting, for example, directed at the output of providing shelter, cannot be shown to contribute to the goal of saving lives in a temperate environment such as Flores.

2. Strengthen the targeting of the response by forecasting the strategy's impact.

This will help to establish cutoff points for determining whether specific needs can be met given timing requirements and logistical constraints. Particular emphasis should be placed upon what can be delivered to the affected population within the short three-to-five-day window of the emergency shelter period.

In the case of the Flores disaster, given the phases of post-disaster shelter needs, it was clear that OFDA would be unable to respond within the emergency period, since an on-site assessment was first deemed necessary, and the assessment team did not arrive until four days after the disaster.

A clear designation of the phases of need would have assisted OFDA in developing a strategy for meeting the intermediate need of protecting the victims from upcoming seasonal rains and winds. Establishing such a framework suggests that (with the benefit of hindsight) OFDA should "time-phase" its procurement in the following manner:

a. Approve immediate delivery of a portion of the commodities suggested by local reports; for Flores, this would have required local purchasing and use of the $25,000 Ambassador's fund to do so.

b. Conduct an on-site assessment to test reported needs.

c. Approve delivery for outstanding needs based on results reported on-site from the assessment team.

3. Strengthen the technical assistance OFDA Advisors provide by:

a. Using the $25,000 Disaster Fund to support OFDA technical assistance. In response to the Flores disaster, the United Nations Development Program provided $30,000, which supported two Indonesian Disaster Advisors to the GOI for six months. Similarly, OFDA used its $25,000 to fund travel by the OFDA disaster response team following Hurricane Hugo. Senior officials at USAID/Jakarta supported this recommendation.

b. Providing a multisectoral assessment team, where possible, to assess shelter, water, and food needs.

c. Expanding the scope of OFDA Advisors to (i) address Mission needs for support of logistics, reporting, tracking, and monitoring; and (ii) make recommendations regarding follow-up activities for reconstruction and prevention, mitigation, and preparedness. The Advisor should also ensure that relief and follow-up activities match local sustainability goals.

OFDA should maximize its response resources by expanding the scope of field personnel to enhance the likelihood that future disaster PMP and response is strengthened and sustained during the immediate response. This would entail training local responders and mission personnel responders during response. Following the emergency period this would entail advising host country officials, international donors/investors on incorporation of disaster mitigation measures in medium and long-term recovery/reconstruction, and as a follow-up, transferring lessons learned (by host country) to improve disaster preparedness.

4. Upgrade the role and training of Mission Disaster Relief Officers (MDROs)

Disaster response is not the MDRO's primary specialty; appointment of that responsibility currently is made on an ad-hoc, short-term basis. In contrast, the response should be based on the level of readiness required. Critical to the level of readiness is the amount of resources that OFDA is investing in disasters worldwide, and the competence and commitment of the MDRO to the success of USAID's response capability. In order to assure this, several factors have to be taken into account: (a) the position of MDRO must be professionalized within USAID and rewarded accordingly, (b) the MDRO could have a special rank within the local Missions so that it would be attractive to those who assume it, (c) USAID should institutionalize the position of MDRO, creating a career path within the Agency, and (d) the MDROs must participate in a training program in order to be able to facilitate an understanding of the different types of disasters, their needs, the importance of

timing, coordination, etc. Training of the MDRO is essential because this person must understand the situation and context of disasters. This is especially so in the case of tsunamis, where the factor of timing is critical. Such training would have improved the decision-making capability within the Mission in regard to procuring the plastic, which needed to be quicker and more decisive.

5. Enhance the potential impact and likelihood of intended-end use by:

(a.) expanding the determination/definition of "appropriate end use," (b.) targeting and reporting on end-use by the neediest victims. (c.) broadening potential impact by providing more than one material input; providing at least one additional input would increase the chances of meeting unmet needs once the items reached the victims, given that victims work consistently to meet their own needs, and outside donations continue to flow in; for Flores, OFDA should have provided water cans in addition to plastic sheeting, and (d.) cutting plastic sheeting to smaller sizes prior to distribution. In Flores, distributing the sheeting in 30-meter rolls influenced end users to see that the sheeting would also be appropriate for larger structures.

6. Allow flexibility regarding determination of appropriate end use of donated materials; both OFDA on-site Advisors and local beneficiaries should have input on this matter. Because disasters are dynamic, OFDA must remain flexible, relying as it does on reports from its on-site teams regarding changing conditions. As appropriate during the Flores disaster, OFDA did shift the target for end-use of the donated materials to include some institutional use (from 0 to 30 percent), as requested by the local population. While OFDA was operating under the assumption that greatest impact could be achieved by providing sheeting only for family dwellings, its response to Hurricane Hugo shows that there is a precedent for using plastic sheeting for such community structures as hospitals.

V. LESSONS LEARNED

1. Pressure exists--particularly when competition for OFDA resources is great--to develop response strategies that commit OFDA to demonstrate achievement at the highest level of impact: saving lives. Furthermore, delays are likely in decision making, given that OFDA will try to ensure that its response meets the standard to which it is being held. OFDA should resist such pressures and justify its response strategies in clear terms regarding what it can be held accountable for achieving through such strategies, such as reducing human suffering, which has clear merit.

2. Rapid response is constrained by the need to demonstrate that a specific response merits resources in competition with disasters of the magnitude of Bosnia and Somalia. Many families in Indonesia had met their emergency and

intermediate shelter needs on their own, leaving as the outstanding need the sheltering of community structures. This result compromised OFDA's goal of "saving lives," which would have justified comparable assistance to that provided to Bosnia and Somalia.

3. It is possible to influence the distribution of donated materials, but difficult, if not impossible, to control their end-use. In Flores, OFDA was the sole donor influencing distribution. While it is likely that OFDA's on-site presence influenced the resulting pattern of distribution, it was not possible to control end-use, since local choices differed partly from what OFDA intended.

4. By limiting its focus to assisting local government disaster response efforts, OFDA misses opportunities to enhance its longer-term impact by taking advantage of a local post-disaster commitment to strengthening future disaster preparedness and mitigation. Regarding the Flores disaster, those opportunities centered around strengthening Mission and GOI preparedness (on which subject a donor-supported conference is planned), plus influencing reconstruction activities to include appropriate disaster mitigation measures.

5. USAID Mission disaster response capability is a key factor in determining the level of assistance obtained from OFDA and in the success of OFDA's response strategy. According to Mission officers, a high level of assistance from OFDA to the Mission was and will continue to be required given that: (a) the MDRO assignment experiences high rates of turnover; (b) institutionalized Mission disaster experience is limited to one soon-to-retire FSN; and (c) the Mission depends on funds from OFDA for response.

6. A balance must be struck between appearing to be rapidly responsive versus establishing "cutoff points" that focus response strategies on what can be delivered within the actual emergency period. In the Flores disaster, OFDA chose to respond as rapidly as possible, even though the procured plastic sheeting would not arrive on-site during the emergency shelter period, and would thus serve to meet shelter needs only over the intermediate and long term.

7. Responding to countries that do not make international appeals for disaster assistance (such as Indonesia and India) requires heightened donor coordination to ensure that assistance strategies serve unmet rather than overlapping needs. As a result of Indonesia's policy, a greater level of coordination was required (but was unavailable) for matching donor contributions with unmet needs. The GOI and UNDP required technical assistance in developing a standard grid for matching donor commitments of aid with locally assessed needs. (This is usually performed either manually or by computer, as developed by OFDA Advisor Paul Bell in response to Hurricane Gilbert in 1988 for tracking supply and distribution by date, method of conveyance, donor, and local beneficiary).

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ANNEX III

DETAILED DESCRIPTION OF THE ORGANIZATION OF THE DISASTER RESPONSE

1. Coordination of the Relief

a. Coordination with other Organizations:

With few exceptions, the disaster response effort was entirely controlled and coordinated by the GOI through Bakornas and its diverse member organizations. The military played an important role, as it arrived on Flores shortly after the disaster, was responsible for the initial assessment reports, coordinated the delivery and distribution of the assistance provided and built 5,000 temporary housing units as part of the reconstruction effort.

The dominant role of the GOI was reinforced by the fact that the Government did not appeal for help and thus did not officially appear to need any outside help. In fact, many of the private sector organizations that participated, such as the NGOs and the National Committee for Relief Assistance to Sikka District, were subordinate to the GOI, which controlled the entire distribution process. Any exceptions were a result of direct appeals, as in the case with CARE distributing the plastic to villages where they normally work.

The international donors were coordinated by the Disaster Management Team that the UNDP set up that served primarily as the information exchange focal point for many international organizations and governments. However, because this was a new experience the coordination was more than passive, but less than required to be effective.

Because of these factors, the US did not play an important role in the coordination of the disaster response effort though it did accept and supported the Bakornas coordinating role in the disaster. USAID also promoted coordination between the donor organizations by lending the OFDA advisor for the DHA/UNDRO representative role.

USAID demonstrated its awareness of the value of and commitment to collaborating with the other participating organizations even though in the case of the GOI it really had no alternative.

b. Coordination within USAID:

The different actors within USAID were:

- OFDA/Washington,
- US AID Mission,
- OFDA Bangkok based advisor.

On the whole, it seems that the coordination between the three actors within AID was not as effective as the situation required. This is evidenced by several situations that occurred, including the following:

- the decision-making process within the USAID Mission was inadequate, slowing the process of obtaining the required plastic; and
- the ambiguity of authority within the Mission over exactly how the plastic was to be used.

Several persons within the Mission admitted that they were not as well prepared for the disaster as they should have been. The position of MDRO had changed several times (including once again when the evaluation team visited Jakarta), with the unfortunate result that the level of disaster preparedness is diminished. Events where the magnitude of loss of life and material damage can be immense and the subsequent investment of USAID resources enormous, cannot be left to chance, which is exactly what can happen when a Mission is unprepared.

There were several levels and sources of assessment, including the following:

c. The GOI:

The GOI provided aerial and ground casualty and damage assessments within the first 24 to 48 hours that formed the early basis of the reporting. Bakornas then informed the donor organizations of the needs, without making an appeal for assistance; this information was what the local Mission initially used to make its situation report to OFDA/Washington.

After this initial period, the local GOI authorities provided constant reporting that was available on a daily basis at both the local Satlaks and the Maumere airport. The GOI knew what the damages were but were not that knowledgeable in determining the corresponding needs which included the following:

- ready-to-eat food,
- cooking utensils,
- emergency shelter,
- potable water and containers,
- medicine,
- clothing.

The exact order of priority is not clear, as there are conflicting reports but the normally generic needs of food, water and shelter were the first three identified by the Satlaks.

b. USAID assessments:

Within three days of the disaster the local Mission had two persons from its staff on Flores and the following day the OFDA advisor arrived, providing on-the-spot assessments; and from December 16, 1992 to January 15, 1993 there were USAID personnel on Flores most of the time.

The OFDA/USAID team, comprised of David Hollister and Abas Rozali (a Mission FSN), was able to carry out its own independent assessment of the situation that was generally in agreement with that of the GOI, though USAID's was more specific. USAID's assessment called for:

- emergency shelter,
- water purification and water supply trucks,
- clothing,
- septic soap,
- baby formula milk powder.

However, USAID thought that the most pressing need was emergency shelter, as the estimates made were that only 10% to 20% of the emergency shelter needs were being met at that time. Of the 17,000 homeless families, over 12,000 needed emergency shelter. Consequently, they recommended that 500 rolls of plastic sheeting would meet the needs of approximately 50% the affected families, with the GOI and other donors meeting the rest. USAID's recommendation was based on the calculation that one roll of 8 by 30 to 50 meters of plastic could meet the needs of between 8 to 12 families, thus sheltering between 6 to 8,000 families (40,000 people).

The Mission was also looking into the purchase of marquis-type tents that could serve as shelters for larger facilities, such as clinics and schools.

An interesting point about the process of how the assessments progressed was that many of the immediate needs such as food, water, medicine, etc. were being resolved as the emergency phase of the disaster response was ending. This led the USAID/OFDA team to recommend shelter as the most outstanding unmet need, especially in light of the fact that the rainy season was approaching and that many of the outlying villages were not being attended adequately.

Consequently, it could be concluded that:

- the assessments were accurate and consistent over time as the USAID/OFDA team recognized that even with the 500 rolls and the assistance of the other donors there would still be families needing shelter (the evaluators' visit in October 1993 confirmed this),
- the assessments were appropriately updated and this was evidenced in the content of the cable traffic that reflected the dialogue over how to narrow the purchase/procurement of the more specific identified commodities.

3. End Use of the Plastic:

a. Influencing Factors:

With regard to the effectiveness of the end use of the plastic several factors must be taken into account. These are:

- OFDA/Washington's instructions that the plastic must be used for life-saving purposes, i.e. emergency shelter for families,
- the insistence on the part of the GOI authorities in both Jakarta and Flores that the plastic should be used for community facilities (supported by the second AID visit to Flores composed of local Mission personnel)
- when Hollister and Rozali undertook a second visit to Flores they discovered that the plastic was being used for structures other than those originally intended because many of the families had already resolved their immediate emergency shelter needs and, consequently, did not need the plastic for those purposes,
- the negotiations between the OFDA team and the local GOI authorities that the allocations in the use of the plastic would be:
  - 60 to 70% family shelters,
  - 20 to 25% schools,
  - 10 to 15% health facilities.

However, the results were different and the end use was the following:
-45% for family shelters,
-31% for schools,
-16% for religious structures,
-2% for health facilities,
-6% for others.

b. Types of Structures that Used the Plastic:

The two major types of structures for which the plastic was used were:

-Temporary family shelter:

Approximately 1,400 to 1,500 families benefitted from the plastic sheeting at a cost of around $50 to $60 per family compared to $500 if a conventional tent had been used. The plastic was almost always used for roofing. Support structures and siding were provided by the recipients. In most cases the shelters were used for individual families though many structures were used for multi-family purposes, usually by neighbors or relatives.

One problem encountered involved informing the beneficiaries about the differences of the AID plastic compared with other sheeting. USAID plastic has a life span of one year compared to several months for other plastics. Many did not know that the white side should be on top so as to reflect heat.

The OFDA team did not think that training the beneficiaries how to construct with the plastic was a problem, as many had experience dealing with similar materials. However, the instructions as to how to use it were frequently lost.

-Temporary public structures:

About 159 rolls were distributed for use by schools, benefitting 475 classrooms for approximately 14,000 students. Of the religious facilities about half were used for mosques and half for churches.

ANNEX IV

ORGANIZATIONS PARTICIPATING IN THE FLORES DISASTER RESPONSE

A number of organizations took part in the Flores Island earthquake/tsunami disaster response operation. A summary of who they were and how they participated follows.

1. United States Government (USG)

a. OFDA

Contributed total direct support of $333,000 consisting of the following:

- a direct cash grant of US$25,000 of OFDA funds that was given to the Department of Social Services of the Government of Indonesia (GOI);
- materials (medicine, blankets, clothing, and food) donated by the USS Dixon valued at $108,000;
- technical support from the housing specialist, who was also assigned to be DHA/UNDRO field representative (funding for him came from an OFDA-supported project in Bangkok); and
- 500 rolls of plastic sheeting valued at approximately $300,000 (including shipping).

b. United States Agency for International Development (USAID) Country Mission

Contributed the following:

- reprogramming of $300,000 of CARE and CRS PL480 monetized funds,
- CRS PL480 rice valued at $165,000, and
- personnel and logistical support.

2. Government of Indonesia (GOI)

a. National Level

The national government was involved at various levels, including:

- Bakornas (the national coordinating disaster relief body).
- Department of Social Services (a member of Bakornas; it functions as Bakornas' executing body).
- Military, which acted on behalf of Bakornas though at times functioned independently. It provided transportation and distribution of supplies at the

pooling point; reception and organization of situation reports from the field; building of semi-permanent housing; and repair of infrastructure.

In relation to OFDA's assistance, the support the GOI included shipping the rolls of plastic and authorizing the military to divide up the rolls for distribution from a central pooling point at the Maumere airport.

b. Local Level

Local governments were represented by the Bupatis, or district chiefs, who also head the local branch of Bakornas, the Satlaks. These disaster response entities are composed of all local government departments, district military commanders, and NGOs. Their efforts in Flores entailed the following:

- coordination of all relief efforts and collection of the situation reports from the field,
- administrative control of supplies channeled through the government, and
- distribution of OFDA's plastic rolls.

3. Major Multi Bi-lateral Donors

a. United Nations Development Program (UNDP)

Even though several UN agencies (UNICEF, WHO, DHA/UNDRO) did participate directly with supplies and funding, the UNDP played the most important role in that it served as the focal point and coordinator for the international donors. It must be said that this role was more passive than active, being limited to information gathering and sharing, but it was a new experience for the UN that will probably be strengthened in future disaster responses.

b. Government of Australia (GOA)

Though the GOA did provide supplies such as plastic, tents for families, tents for emergency health services, water treatment pills, and generators for the emergency hospitals, what sets it apart from other donors was that its assistance went directly to Maumere, not through Jakarta. This allowed the GOA's help to reach the affected families much faster than any other donor's. In addition, the planes used to transport the GOA's commodities were from its own military.

c. Government of Japan (GOJ)

Special mention is required with regard to the GOJ, whose contribution was the most substantial of any donor. This included:
- $1,000,000 in cash,
- $500,000 in-kind contribution, and
- $251,009, in the form of a mission of eight experts to advise on recovery measures and mitigate further damage.

d. Other Donors

Other donors were as follows:

- European Economic Community, and
- the Governments of Japan, Malaysia, Canada, New Zealand, Belgium, Sweden, Germany, Italy, Netherlands, Norway, Singapore, South Korea, France, Switzerland, and Great Britain.

4. Local and International NGOs

Though there were many international NGOs that provided assistance to Flores (a disproportionate number of which were from Austria and Australia), those most involved in USAID's response were the following:

a. CARE International

- used reprogrammed PL480 funds for water supply projects,
- provided supplies bought in Sulawesi, such as cooking utensils, clothing, food supplies, kerosene lamps, and jerry (water) cans, and
- distributed AID plastic sheeting in coordination with the Satlaks.

b. Yayasan Pelita Swadaya (YPS), the local counterpart of Catholic Relief Services (CRS)

- provided food from its CRS stocks, which USAID authorized, and
- provided goods such as jerry cans, and utensils.

c. Dian Desa (a large national NGO that did not receive Flores USAID assistance but is worth noting because of its rapid response): The second day after the disaster, Dian Desa chartered its own helicopters (bypassing the Government) and provided food supplies and clothing.

d. Mr. Ibnu Sutowo, businessman from Jakarta (Mr. Sutowo is also chairman of the Indonesian Red Cross).

e. National Committee for Relief Assistance to Sikka District supplied clothing and food.

ANNEX V

Indonesia: Its People, Government, and Society

Based on this evaluation, several conclusions and observations can be made about Indonesia:

_ It is a very hazard-prone country that is especially vulnerable to earthquakes, tsunamis, and volcanic activity. Since 1972 it has placed third in the world on OFDA's list of countries with the greatest number of recorded disasters.

_ It has a well-organized disaster response system that has proved itself in emergency situations.

_ It does not appeal for assistance in disaster situations.

_ It is a very structured society governed by a very centralized government.

_ In general, the GOI's response was impressive. In the first 24 to 48 hours, it employed aerial and ground casualty and damage reports, search and rescue operations, evacuation of survivors, and early relief activities.

_ The Indonesian authorities insisted on controlling all the response activities, including the distribution of plastic sheeting.

_ Though the GOI accepted the assistance offered by the USS Dixon, offers of direct participation by U.S. military personnel were declined.

_ The Indonesian authorities did agree that emergency shelter met an urgent need, and it was grateful for the assistance USAID provided.

_ In less than four months after the disaster, the GOI began a reconstruction project of more than 5,000 units (in attempts to help meet an estimated need for 17,000 homes).

_ The Indonesian authorities and affected communities suggested that OFDA's plastic be used not only for sheltering families but also for public facilities.

_ The level of trust and coordination between the GOI and OFDA was good. As a result, a good rapport was established between GOI authorities (both at the national and local levels) and the OFDA/Mission team members that will be very useful in future disaster response efforts.

_ The GOI was responsible for transporting the plastic from Jakarta to Flores, which was one of the primary reasons why the material arrived almost a month after the disaster.

_ Within two to four days after the disaster, NGOs were examining ways to provide relief, but unfortunately were not included by the GOI in relief operations until a week later.

_ The Bupatis (local district chiefs) were not inclined to work with local NGOs.

_ Local NGOs said that the prices of supplies were inflated and that funding was being siphoned off by local authorities.

ANNEX VI

PERSONS CONTACTED

- David Hollister, housing/disaster specialist at ADPC/AIT
- Terry Jeggle, Director of ADPC/AIT, Bangkok, Thailand
- Abas Rozali, FSN, Jakarta AID Mission
- Philip-Michael Gary, Deputy Director, Jakarta AID Mission
- Col. Djajusman, Director for Disaster Affairs, GOI
- Aloysius Beta Tupen, Administrative Chief, Larantuka Satlak, GOI
- Col. H. Iskander M., Bupati, Larantuka, GOI
- Dr. R. Ralo, Director DEPSOS, Sikka, GOI
- J. Mannes Tiwang, Head of Satlak, Sikka, GOI
- Hilde Cecilia Thilde, YPS/CRS, Maumere
- Pidelis Nong Gete, YPS/CRS, Maumere
- Village Members at sub-village of Ladandai, village of Megapanda
- Dr. Sudibyo Markus, Program Officer, UNDP, Indonesia
- Joseph Carney, MDRO/USAID, Indonesia
- Patrick Foss, World Bank Contractor, Maumere
- Ray Dionne, OFDA/Washington
- Barry Heyman, OFDA/Washington

ANNEX VII

SCOPE OF WORK

EVALUATION OF INDONESIA EARTHQUAKE/TSUNAMI DISASTER ASSISTANCE

I. Purpose

The purpose of this evaluation is to:

a. Appraise how the U.S. level of assistance was determined. Develop indicators of the "cutoff" point for assistance. (In other words, help answer the question of when assistance is too little, too much, or just right.)

b. Assess OFDA and USAID/Indonesia management of the disaster response.

c. Evaluate the end results of the emergency assistance provided by OFDA to Indonesia during the December 1992 earthquake/tsunami.

d. Develop "lessons learned" to improve future disaster response.

(The results of this assessment will be compared to another evaluation of a tidal wave disaster response in Nicaragua.)

II. Background

On December 13, 1992 at 13:29 local time, an earthquake of 6.8 magnitude struck near the Indonesian island of Flores. The earthquake generated a 26.2 meter high tsunami, which swept over the islands of Babi and Pamana Besar, located off Maumere's coast. Initial damage estimates indicated that 80 percent of Maumere's buildings and houses were damaged, the piers of Maumere and Ende's ports were damaged, and the five bridges providing land communication between Maumere and Larantuka were destroyed. On December 13, 1992, the U.S. Ambassador declared a disaster for the earthquake-affected areas, and $25,000 was granted to the Indonesian government for relief.

Final official estimates are that 2,080 people were killed, 375 gravely injured, and 1,728 injured, and an estimated loss of $100 million in physical assets. Relief was hampered by poor communications with outlying areas to identify needs and by damaged infrastructure to transport/unload relief supplies. From the onset, the Indonesian military coordinated the delivery of relief supplies and repair of the damaged infrastructure (communications, roads, port facilities). While the local PVO/NGOs were able to help earlier, their assistance was not officially requested until December 20, 1992.

Two U.S. Agency for International Development (A.I.D.) Mission staff arrived at the disaster site on December 16 to assist with disaster relief and coordinate U.S. response to the disaster. A housing/disaster specialist funded by the Office of U.S. Foreign Disaster Assistance (OFDA), also representing the United Nations Department of Humanitarian Affairs (UN/DHA), joined a Mission representative on December 17, 1993, and they toured the disaster areas. On December 18, 1992, the USS Dixon, on a previously scheduled port call in Depasar, Bali contributed $108,000 worth of supplies, mostly medicine to GOI. The supplies reached Flores island on December 21, 1992.

Assessment of the area by USAID Mission personnel and OFDA housing/disaster specialist determined that the most pressing need was temporary shelter. An estimated 25,383 homes were damaged, leaving 85,000 to 90,000 people homeless; provision of plastic sheeting was the best solution. The Mission recommended that 500 rolls of plastic sheeting would meet the needs of 50 percent of the affected people, with the GOI and other donors meeting the rest of the need.

On December 24, OFDA and the Mission determined that the requested plastic sheeting would be shipped from the OFDA stockpile in Bangkok, Thailand, arriving by December 30, 1992. With Mission assistance, the GOI received the plastic and began transporting it to Flores island. On January 1, 1993, a second USAID Mission team, again with the OFDA Housing/Disaster specialist, arrived in Flores to develop a specific plan for the use of the plastic and to train local groups in design and construction of the temporary shelters. By January 8, 1993 all 500 rolls arrived in Indonesia, and 80 rolls of sheeting were delivered to the affected areas.

The PVO/NGOs initially did not play a major role in the relief effort, but they later became involved in the distribution of supplies, through use of their local networks and their ability to procure transportation to hard-to-reach areas. Twelve local PVO/NGOs eventually assisted in the rehabilitation phase of the disaster. Yet the PVO/NGOs complained of government corruption by citing inflated supply costs and missing money the donations fund managed by the government. (All donations for disaster relief were placed in a fund and PVO/NGOs received money for rehabilitation activities from the fund as determined by the regional relief office.) Other relief came from U.S. businesses in the area. Other major donor countries included Japan, Great Britain, New Zealand, and Australia. By March, 1993, food aid was halted because of fears that the population was becoming too dependant on outside support. The GOI personnel still in Flores were concentrating on reconstruction of schools and buildings, and improving the morale of the people affected by the earthquake.

III. Scope of Work

The evaluation of the Indonesia Earthquake/Tsunami Disaster Assistance will take place in-country from October 4 to 20, 1993.

A. Focal Points and Key Evaluation Questions

Several focal points and key questions are presented below. The focal points, inferred from the cable traffic and memos on the earthquake/tsunami, are not mutually exclusive. Representing functional categories, they are as follows: (1) Level and Target of the Response; (2) Assessment Methods; (3) Delivery and Distribution of Relief Supplies and Commodities; (4) Timeliness of the Response, (5) Coordination of the Relief; (6) Monitoring and Reporting; (7) End Results; and (8) Lessons Learned. Each is accompanied by questions.

1. Focal Point: Level and Target of Response

Questions

(a) How did OFDA determine the purpose, target population and level of disaster assistance it would provide?

(b) Was the level of response commensurate with the magnitude of the disaster?

(c) To what degree did needs assessments, past lessons learned, and local preparedness factor in the decisions?

(d) How would OFDA response have been different if local preparedness had been stronger?

(e) Were OFDA's chosen inputs the most appropriate and most needed? Were there inputs that should have been added or not provided?

(f) What USG funding sources were considered (such as local currency, diversion of development resources), which were finally utilized, and were they most appropriate?

2. Focal Point: Assessment Methods

Questions

(a) What were the methods used to assess the disaster, measure demand for supplies, and follow up on results; how well did these work and why/why not?

(b) Were the assessments accurate, appropriately updated and actions changed accordingly?

(c) How well were early assessments in line with mid-term and final assessments?

3. Focal Point: Delivery and Distribution of Relief Funds, Supplies and Commodities

Questions

(a) Did the relief supplies reach the targeted population?

(b) Did OFDA, AID/Nicaragua and relief recipients meet accountability requirements?

4. Focal Point: Timeliness of the Response

Questions

(a) Was the timeliness of OFDA and other USG response adequate?

5. Focal Point: Coordination of the Relief

Effectiveness and appropriateness of OFDA's and the Mission's support role in coordinating the relief effort with Indonesian government agencies, international relief agencies, local and US NGOs, private donors, and with other USG entities.

Questions

(a) How was the U.S. coordinating role determined and how well was that function served?

(b) What were the actions and roles taken by the different participants in responding to and coordinating the disaster?

(c) How appropriate was the utilization of the Regional Advisor/Bangkok?

(d) What were the constraints and opportunities of coordinating with several different players; what were the critical bottlenecks, if any?

6. Focal Point: Monitoring and Reporting

Quality, timeliness, usefulness and dissemination of OFDA reports in defining changing conditions of the disaster, supply needs assessments, and reporting to all concerned parties the latest findings

Questions

(a) Was the reporting adequate for improving over time the targeting of the response?

(b) Was the reporting effective in ensuring USG agencies were kept up-to-date?

(c) Was the reporting shared with other response agencies? Did this assist coordination?

7. Focal Point: End Results

Questions:

(a) Was the end use of the funds, supplies and commodities appropriate?

(b) Was the technical assistance and training provided appropriate and did it have the intended result?

(c) What problems and constraints were encountered? What enabled them (or might have) to be overcome?

(d) What opportunities were identified for strengthening future response, particularly via PMP strategies? Have they been acted upon?

8. Focal Point: Lessons Learned

Questions

(a) What lessons can be learned to improve future assistance by strengthening OFDA decision-making, management, and end results of disaster response.

(b) What efforts were made by OFDA to learn lessons from this disaster to strengthen future response?

B. Development of Indicators

This evaluation is directed in part to the use of indicators in disaster response efforts. The evaluators will focus on existing indicators, as well as develop new ones that advance the art of measuring success in disaster relief.

IV. Evaluation Approach and Methodology

The approach to evaluation is that of an impact evaluation. It will determine what results of disaster relief were achieved through an activity completed almost two years ago. At the same time, it will have to carefully examine the process of the disaster assistance from first response to last. It will also have to assess the end use of the relief coordination and supplies.

The methodology for the evaluation includes a review of relevant documentation; review and analysis of relevant statistical data; interviews with Agency relief officials and Regional Bureau officials in Washington and in Indonesia; interviews with host country civil defense

officials, USAID and Embassy officials, and representatives of donor relief agencies and organizations incountry; site visits for observation of results of relief assistance; field use of focus-group interviews and key informant interviewing; A total of 22 days will be devoted to the evaluation, including briefing, country and site visits, debriefing and report writing and travel time. One day will be spent at AID/W at the outset and at the end for de-briefing. A total of 15 days will be spent in country.

V. Evaluation Team Composition

The evaluation requires two consultants, as follows:
(To be completed).

VI. Logistics and Scheduling

Prior to the field aspect of the evaluation, the consultants will spend one day in Washington with BHM to detail their functions and schedules, meet with AID officials for briefing purposes, and review relevant documentation. At that time the country visit schedule will be reviewed with the consultants. Site visits and appointments with key officials will be reviewed with consultants. Such visits and appointments will set up in advance, where possible. The field work portion will be carried out in 18 days. A total of 22 is devoted to the evaluation. The consultants' draft report will be presented at the end of the consulting period.

VII. Reporting Requirements

The final report must be completed and approved by the project CTO.

VIII. Work Plan

A detailed work plan for the consultants will be developed with them during their Washington visit. By that time a sequence of visits will have been decided and detailed schedules of work can then be determined.

ANNEX VIII

INDONESIA DISASTER HISTORY