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DRAFT

DISASTER PREVENTION, MITIGATION, AND PREPAREDNESS STRATEGY

(FY 1992-1996)

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PREFACE

Prevention, mitigation and preparedness are terms central to this strategy. There is often confusion about their meaning. For purposes of this strategy, they are defined as follows:

Disaster Prevention - Disaster prevention encompasses those activities taken to prevent a natural phenomenon or potential hazard from having harmful effects on either persons or economic assets. Disaster prevention includes such activities as channelling the direction of debris flow away from population centers, construction of dams or dikes to eliminate flooding, land use planning to prevent construction in disaster-prone areas, and safe destruction of outdated hazardous chemicals.

Disaster Mitigation - Disaster mitigation concentrates on reducing the harmful effects of a disaster. Mitigation accepts the occurrence of disasters, but attempts to limit their impact on human suffering and economic assets. Disaster mitigation activities include improving building standards, installing hurricane straps to reduce wind damage to roofs, and modifying crop patterns to reduce agricultural vulnerability.

Disaster Preparedness - Disaster preparedness aims to limit the impact of a disaster by structuring the response and providing quick and effective actions after the disaster. Preparedness is unique in that it addresses actions in both the pre-disaster and post-disaster phases. It also includes early warning systems.

EXECUTIVE SUMMARY

Problem

Disasters cost a heavy toll in casualties and material loss. They are increasing in number, severity and visibility. Their impact is especially severe in developing countries. Disasters take about 250,000 lives worldwide each year and cause about $40 billion in physical damage. Up to 95% of the lives lost annually to disasters are in developing countries and losses to GNP are over 20 times greater in poor than in rich countries.

Examples are numerous of disasters which have seriously undermined A.I.D. development efforts in the past. The October 1986 earthquake in El Salvador killed 1,100 and resulted in $1 billion in damages, or 25% of El Salvador's GNP; the A.I.D. program was about $260 million per year and providing nearly 100% of El Salvador's public investment at the time. Civil strife in Mozambique during 1988-1989 resulted in 7.5 million people dependent on food aid and required $281 million in international assistance of which over $55 million was from A.I.D. Such disasters continue to pose a threat to development efforts (including A.I.D. programs) especially in the more disaster-prone countries.

The prevention, mitigation, and preparedness (PMP) strategy addresses this threat. Measures to mitigate and, in some cases, to prevent disasters are known. Such measures can provide protection against loss of life and property, as well as against major setbacks to A.I.D. program goals. The purpose of the strategy is to define priorities and direction for measures A.I.D. should carry out to foster such protection for the next five years (FY1992-FY1996).

Development of the strategy started with a review of lessons learned from prior programs in PMP. On the basis of this review, OFDA confirmed a growing realization that its preparedness focus of the past should be complemented with new initiatives with more direct and measurable impact.

Goals

Overall goals for the strategy are to 1) save the greatest number of lives, 2) reduce human suffering, and 3) protect economic assets from disasters. A further goal is to strengthen concern for disasters in how A.I.D. investments, together with those of other donors and the host countries themselves, are made. The strategy is also expected to lead ultimately to reductions in resources spent on disaster response.

Components

The strategy has three basic components. The first is to integrate disaster PMP concerns into the programming of all A.I.D. assistance in the most disaster-prone countries. Consciousness-raising and constituency-building will be pursued through various means, some drawn from previous similar experience with integrating WID and environmental concerns within A.I.D.. Including disaster PMP concerns in A.I.D. training courses, programming conferences, and TDYs to target countries will be among the approaches used.

The second strategy component is to enhance the PMP impact of all A.I.D. resources that are contributing or could contribute to PMP. Many A.I.D. programs, in addition to those of OFDA, such as the food security programs in Africa, housing programs, and private sector programs, have impact or potential impact on PMP. Working arrangements with these programs to integrate and/or sharpen focus on PMP will be pursued under the strategy. Illustrative of such closer cooperation is a formal understanding reached between OFDA and PRE/H in 1990 to pool resources and work together in meeting mutual objectives. Similar agreements are being explored with R&D/AGR and the PRE Bureau. With Missions in the most disaster-prone countries, OFDA will try to build, reinforce, and expand on PMP elements of programs already part of Mission portfolios. OFDA plans to offer on an annual basis a portion of its PMP resources to be used in combination with Mission funds to strengthen PMP elements of development activities within approved Mission programs. OFDA will also facilitate Mission buy-ins to projects serving mutual objectives.

The third strategy component is to support stand-alone activities that fill PMP gaps in Mission programs or test new initiatives in meeting strategy objectives. These activities will be focused on the priority sectors and module objectives outlined in the strategy. OFDA will seek full Bureau and Mission consultation and clearance before undertaking any PMP activity in the field.

Target Countries

OFDA carried out a vulnerability assessment to define the most hazard-prone countries which would be targets for PMP programs. Taking into account analysis of historical proneness to disasters and estimates of future hazard vulnerability as well as host country coping capacity, OFDA proposes the following as target countries:

Latin America	Asia	Africa
Nicaragua	Bangladesh	Mozambique
El Salvador	Fiji (South Pacific)	Sudan
Guatemala	Sri Lanka	Ethiopia
Peru	Philippines	Sahel Region
Ecuador	Indonesia	Somalia
Caribbean Basin		Angola

Priority Sectors

OFDA organized a process with outside expert assistance to propose priorities for all A.I.D. assistance relating to PMP including resources specifically available for this purpose to OFDA. Priorities were selected through analysis of disaster impacts on the sector and potential for A.I.D. to make an effective intervention. Priorities are indicated below.

Also indicated are proposed allocations to priority sectors from OFDA's resources. They are indicative and will be adjusted based on experience, feasibility studies and evaluations. Together with other contributory A.I.D. programs, a total of $75 million of OFDA funding is the amount considered needed to produce significant impact in achieving strategy objectives, protecting A.I.D. investments, and potentially reducing relief expenditures.

Sector	Allocation	Percent
Basic Facilities	22.5	30%
Food Production	15.0	20%
Disaster Management	15.0	20%
Private Sector	7.5	10%
Health/Industry	7.5	10%
Special Studies	7.5	10%
	$75 million	100%

Efforts in all sectors will be directed to influencing the policy environment in relation to PMP concerns. In addition, the basic facilities module of activities aims at improving construction with disaster-resistant materials and building methods; mitigating losses through building codes, correct siting, land use, and insurance; and integrating prevention and mitigation concepts in A.I.D.-funded housing and urban development projects. The food production module includes activities designed to mitigate the early stages of famine.

Under the disaster management module activities currently programmed in public health preparedness, public awareness campaigns, and training in disaster planning management will be implemented. The private sector module focuses on combining public authorities and community leaders with private sector entities on mitigation activities. The health/industry module includes activities to develop replicable hazard mitigation projects in metropolitan areas threatened by industrial accidents and to carry out pesticide and hazardous chemical disposal. The special studies module includes country and site hazard assessments, project designs, feasibility studies, and evaluations. Instrumentalities that will be emphasized in all the modules are the private sector and training.

Other Agencies

PMP goals will be further advanced through various forms of interaction and collaboration with other agencies (PVOs, other bilateral donors, international organizations). OFDA will seek to develop replicable project initiatives and approaches for other agencies, leverage other agency support for projects of high priority for OFDA, and encourage on-going and new efforts by other agencies to build constituencies for PMP. OFDA will also seek to exploit parallel program and constituency-building opportunities presented by the UN designation of the 1990s as the International Decade for Natural Disaster Reduction (IDNDR).

Management

OFDA fully recognizes that cooperation with Bureaus and Missions on an Agency PMP strategy must be considered in the context of continuing pressures to concentrate and focus programs and to adjust to ever tighter OE and personnel constraints. For this reason, OFDA's approach will be to add as little as possible to Mission management burdens where there are Missions and to be self-contained where Missions are absent.

OFDA will use management in place to the maximum extent possible. When OFDA cooperates with programs planned as part of Mission portfolios, OFDA will rely on Mission management. Where additional management is required, OFDA would be prepared to supply necessary funding for that support. Management support of the RHUDOs has been enlisted. OFDA will also expand its group of regional advisors.

End of Five-Year Status

With successful implementation of this strategy, there will be in five years a significant change from the present. By FY 1996 consciousness about disaster impacts and their management will have been raised throughout A.I.D. A.I.D. assistance strategies and program processes in target countries will more directly and successfully

End of Five-Year Status

By FY 1996, consciousness about disaster impacts and their management will have been raised throughout A.I.D. A.I.D. assistance strategies and program processes in target countries will more directly and successfully integrate a concern for disasters and PMP. A.I.D. employees will be better trained to promote country strategies and assistance programs that are more sensitive to disaster issues in target countries. PMP mainstream of A.I.D. and other participating donors and organization (PVOs, bilateral and multilateral donors, and international organizations).

A.I.D. expects this strategy will produce results in reducing the negative human/economic impact of disasters that are substantially greater at the end of the five years than is the case now. Those improved results will afford more effective protection for A.I.D., other donors and host-country development investments and will reduce disaster response requirements in the targeted countries.

The determination of tools and methodologies to measure achievement of targets is a high priority component of this strategy. The PMP evaluation completed in 1990 concluded that no valid economic analysis methodology exists for PMP activities. We have discovered subsequently that this conclusion is not totally true. Measureability is obviously problematic - it takes a disaster to occur to determine the effectiveness of the preparedness efforts, and disasters don't occur according to our schedules. Nevertheless, during this five year strategy period, impact measurement methodologies and tools will be an integral part of all the activities.

FHA/OFDA will build an evaluation system to help assess the impact of the areas it will support. The evaluation of components I and II of the strategy will be conducted in conjunction with Missions; component III will largely consist of project-like evaluations. FHA/OFDA has in place a long term contractor to assist in the evaluation of the strategy.

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I. PROBLEM

Disasters cost mankind a heavy toll in casualties and material loss. The World Bank estimates that disasters take about 250,000 lives worldwide each year and cause about $40 billion in physical damage. Over the decade of the 90s, therefore, lives lost as a result of natural disasters could total 2.5 million and economic losses could reach $400 billion.

The frequency and severity of disasters is increasing. Rising populations living in high risk areas make it inevitable that disasters, when they occur, will affect more and more people. Environmental degradation is weakening natural defenses to disasters and their impact. Deforestation is becoming a major contributing factor in devastating droughts and floods. Chemical and oil spills, as well as industrial accidents, have become increasing threats as countries develop, often without adequate safeguards, and as rural people crowd into ill-prepared cities.

Growing ethnic and nationalistic tensions and increasing instability in the world are leading to more civil strife, famine, displaced populations and increasing needs for disaster assistance. Events over the past few years have demonstrated with force that world instability will not decline with the end of the Cold War. The Gulf War, the emergencies in Eastern Europe, the increasing turmoil in Africa, and the poor economic results of the "lost decade" signal more widespread instability.

The number of disasters to which the U.S. Government and the donor community have responded each year has risen (U.S. Government expenditures on disasters has risen from an average of under $20 million a year through FY83 to an average of over $40 million a year since FY84). This is not just because there are more disasters. A major additional reason has been vastly increased media access to and interest in disasters globally. Greater public awareness of disaster events has resulted in spontaneous outpourings of private relief and increased pressures for the US and other donor governments to respond. The U.S.G. has spent $2 billion on disaster responses since 1979.

Impact of disasters is particularly severe in developing countries. Poverty limits resilience to disasters. According to UNDRO, as many as 95% of lives lost annually to disasters are in developing countries, and economic loss in terms of percent of GNP is 20 to 30 times greater in poor than in rich countries.

Recent examples from Latin America, Asia, and Africa illustrate the devastating impact disasters can have in human and economic terms and in undermining A.I.D. development program investments.

- An October 1986 earthquake in El Salvador caused 1,100 deaths, affected 500,000, and resulted in $1 billion in damages representing 25% of El Salvador's 1986 GDP. This earthquake was a major setback for the A.I.D. program which was approximately $260 million per year and providing nearly 100% of El Salvador's total public investment program at the time.

- The Mount Pinatubo volcano eruption in the Philippines in 1991 left 690 dead, affected almost 1.2 million and caused economic losses of at least $260 million as of October 1991 (the threat from massive mudflows unleashed by heavy rains will continue for several rainy seasons to come). The A.I.D. program in the Philippines for 1991 was $360 million.

- Civil strife in Mozambique during 1988-1989 resulted in 7.5 million people dependent on food aid and required $281 million in international assistance of which $ 55.6 million was from A.I.D.

During the 70s and 80s much has been learned about the nature of disasters and how nations and communities can prevent their occurrence, mitigate their effects, and prepare better responses. Two key lessons learned are:

- It is possible to reduce or eliminate impact of disasters through pre-disaster management. Improved warning and evacuation systems have cut death tolls. As a result of early warning systems established in Bangladesh with assistance from OFDA during the 70s, cyclone warnings and evacuation of 350,000 people were credited with saving many lives when the April 1991 cyclone hit. Structural and non-structural mitigation measures have been shown to alleviate the effects of earthquakes, cyclonic storms, landslides, floods and droughts.

- It is far more cost effective to spend scarce resources on protection of communities before disasters than on recovery after. A United States Geological Survey expert estimates that $40 billion invested in mitigation over the next decade could reduce projected losses by up to $280 billion.

For more than a decade OFDA has pioneered in making prevention, mitigation and preparedness concepts operational realities. Largely on a pilot basis, OFDA built a portfolio of a wide range of exploratory activities focusing initially on stockpiling of supplies and planning for disasters, then on more accurate forecasting and early warning systems. OFDA began to realize, however, that these preparedness programs, while valuable, may not have as high a potential pay-off as the more long-term prevention and mitigation programs might have. It recognized that many A.I.D. development programs were having impact on disaster prevention and mitigation but that impact could be strengthened with more deliberate focus. It also recognized that new initiatives promising more measurable and greater impact should be explored. For this reason,

OFDA sought outside expertise to evaluate progress to date and to help develop this strategy.

The problem this strategy responds to is the threat disasters pose to people and development goals and programs, with special emphasis on the protection of A.I.D. investments. Disasters can undo years of development effort and investment in minutes. Measures to mitigate and sometimes prevent disasters are known. To protect against major setbacks to development and A.I.D. programs is essential for realization of A.I.D. goals. Investment in PMP programs provides that protection. To guide proposed investments in PMP over the next five years (FY1992 - FY1996) and explore promising new initiatives especially in mitigation, OFDA has developed this strategy.

II. POLICY FRAMEWORK

The PMP strategy responds to the International Disaster Assistance (IDA) Congressional mandate and contributes to A.I.D. goals.

A. Congressional Mandate

In the Foreign Assistance Act of 1961, as amended, OFDA is charged with authority and responsibility for carrying out the President's mandate to "furnish assistance to any foreign country, international organization, or private voluntary organization, on such terms and conditions as he may determine, for international disaster relief and rehabilitation, including assistance relating to disaster preparedness, and to the prediction of, and contingency planning for, natural disasters abroad." While both interventions - preparation for disasters before they take place (PMP) and response actions after they occur (relief and rehabilitation) - are given equal importance in the legislation, the reality to date has been that post-disaster relief and rehabilitation has held by far the greatest claim on OFDA resources.

B. A.I.D. Goals

A.I.D.'s goals are to assist developing countries to:

- realize their potential through development of open and democratic societies and the dynamism of free markets and individual initiative; and,

- improve quality of human life and expand range of individual opportunities by reducing poverty, ignorance and malnutrition.

Six principles guiding A.I.D. programs in meeting these objectives are:

- support for free markets and broad-based economic growth;

- concern for individuals and the development of their economic and social well-being;

- support for democracy;

- responsible environmental policies and prudent management of natural resources;

- support for lasting solutions to transnational problems; and,

- humanitarian assistance to those who suffer from natural or man-made disasters.

The PMP strategy contributes to these Agency goals and principles. PMP programs seek to contribute to broad-based economic growth by reducing the costs to development caused by disasters. PMP programs will also seek to strengthen and use market incentives wherever possible to achieve PMP objectives. For example, higher insurance premiums for poorly engineered buildings not using hurricane and earthquake resistant construction standards can act as a strong economic stimulus to adopt such standards.

Preparedness and mitigation measures to be effective depend to a great extent on individual willingness to modify and change behavior. Individual initiative therefore is a resource that PMP programs will be designed specifically to exploit.

OFDA's capacity to provide resources during periods of instability for new or shaky democracies may provide opportunities to strengthen those democracies. More effective natural and technological hazard prevention and mitigation is closely interrelated with prudent management of environment and natural resources. Disasters frequently are transnational and PMP programs contribute to transnational solutions.

A successful PMP strategy will contribute to all these goals and will improve quality of human life by enhancing the prospects for sustained economic growth in free market, democratic societies.

III. STRATEGY ANTECEDENTS

The development of this strategy started with the experience of the last two decades and OFDA's growing realization that the preparedness focus of the past should be complemented with new initiatives with more direct and measurable impact. To build on the experience and lessons of the past, OFDA undertook a program review (Booz-Allen and Hamilton, Labat-Anderson, 1989) and an evaluation (Management Systems International, 1990). To facilitate development of the strategy and prepare for its implementation, OFDA reorganized in 1991, creating a full-time unit focusing on PMP. This background is summarized below.

A. Last Two Decades

OFDA was created in 1964 to facilitate coordination of USG relief efforts in foreign countries. By the end of the 60s it became evident, however, that the efficiency of U.S. and other donor relief was largely dependent on the ability of host countries to cope with their own problems. OFDA began a series of annual International Disaster Preparedness Seminars which brought disaster managers from throughout the world to share their experiences and take advantage of the successes of others.

Following the Guatemala earthquake of 1976 and droughts in Africa and Haiti, OFDA began a more formalized approach to preparedness which focused largely on technology transfer and early warning. OFDA, in concert with UNDRO, the League of Red Cross and Red Crescent Societies and others, increased its preparedness and early warning activities and better adapted them to the indigenous needs of the governments and populations in need. OFDA also began to sense that effective early warning depends not only on technology transfer but also on public education. The importance of first responder training and public awareness in making better use of early warning was increasingly recognized.

Applied research, most of which was associated with OFDA's early warning activities, has given OFDA and its collaborators new understanding of the problems posed by earthquakes and volcanoes. OFDA's work has increased knowledge of the mechanics of disasters and of the areas of greatest risk from natural hazards. It formed the basis for a new focus on mitigation.

In the late 70s, OFDA began to explore the potential for new approaches involving mitigation. It tested support for replicating housing mitigation programs that had been developed as an outgrowth of the 1976 earthquake in Guatemala. It undertook studies for such programs in the Caribbean, the Pacific, and Asia. But, while OFDA put up the planning money, there was a lack of follow-through by funding agencies. In agriculture, fishing, and the small enterprise sectors, OFDA supported efforts by the Pan-Caribbean Disaster Preparedness and Prevention Project and the

Pacific Island Development Program to develop agricultural and economic mitigation programs. These efforts were actively supported by the disaster preparedness authorities in each of the regions, but national planning agencies failed at that time to buy in to the efforts.

Until the late 70s, OFDA conferences and training events were held largely in the United States. During the 80s, OFDA training activities were more sharply focused on the specific regional and professional needs of host national participants, and preparedness training workshops were conducted at regional sites. Activities emphasized training trainers, thus creating local capacity to assume training responsibilities. The placing of regional advisors in Latin America and Africa further demonstrated a more field-oriented approach.

During the 80s, there has also been growing awareness of the extent to which environmental degradation causes disasters, and of the intimate link between disasters and development. OFDA has taken part in defining these new themes. It has been part of the Harvard Institute of International Development's project studying links between disasters and development and has funded studies seeking information on the links between climatic change and agriculture prediction, for example. These issues, however, were not dealt with comprehensively by anyone during the past decade.

As focus began to shift during the 80s to prevention and mitigation in addition to preparedness, OFDA recognized that many of A.I.D.'s development assistance activities had potential and real impact on PMP. Much of agricultural and rural development in famine-prone areas is relevant to famine mitigation. How shelter, life-line, and production facilities are built significantly affects lives lost, injuries sustained, and productivity lost when disasters strike. OFDA realized that a new and broader PMP strategy would involve A.I.D. resources from multiple sources and would require stronger coordination of those resources.

OFDA has long appreciated the role U.S. private voluntary organizations (PVOs) and other donors can play in PMP. OFDA has cooperated extensively with PVOs in disaster relief and has encouraged them to focus more and more on pre-disaster PMP as well. OFDA has convened annual PVO conferences throughout the decade.

OFDA has also coordinated activities with other donors. Principal donors and the programs they have emphasized are:

The United Nations family, including UNDRO, UNDP, UNEP, UNESCO, and Habitat, has supported integration of disaster mitigation in national, environmental and urban planning processes and has supported research in vulnerability reduction and earthquake engineering.

The Organization of American States (OAS) has focused on policy dialogue among national and international organizations; technical assistance to identify hazard vulnerability and to plan its management; and training and information dissemination through conferences, publications and courses.

The Pan American Health Organization (PAHO) focuses most of its assistance on ministries of health and institutions of higher education in health-related fields, working to join the ministries and universities in more effective association with local governments, NGOs and other disaster relief officials.

The World Bank (IBRD) has traditionally provided substantial funding for rehabilitation and reconstruction projects and has adopted a policy authorizing the Bank to:

- disseminate up-to-date information on disaster mitigation and prevention methodologies;
- include hazard prevention and reduction components in Emergency Recovery Loans as well as other investment operations in disaster-prone countries;
- undertake free-standing prevention and mitigation projects in countries prone to specific types of emergencies; and
- collaborate with the UNDP and other relevant international agencies, NGOs and donors in designing specific prevention and mitigation programs.

The Inter-American Development Bank (IDB) has approved a natural disasters policy, in part stimulated by OFDA, authorizing the IDB to encourage member governments to take the effects of disasters into consideration in their planning processes and to provide technical assistance to member governments in natural hazards assessments and hazard management.

The Asian Development Bank (ADB), through the Asian Institute of Technology, has conducted a major study, Disaster Mitigation in Asia and the Pacific, which led the ADB's President to vow to continue the mitigation dialogue "with a view to making disaster mitigation an integral part of development planning in the region."

Lessons learned during the last two decades with respect to PMP were the potential of early warning combined with public awareness, the contribution research could make in improving early warning and risk assessment, the benefits of a more field-oriented approach, and the importance of the linkages between the environment, disasters, and development. The promise of pay-off in mitigation programs was

recognized and explored but funding agencies and national planning authorities rarely followed through. There was growing realization that renewed efforts in mitigation were needed and that more effective coordination of all A.I.D. resources contributing or potentially contributing to mitigation would need to be an important part of those efforts.

The close of the 80s witnessed the emergence of significant new donors with Japan the most obvious example. Its international assistance budget is generous, and includes disaster preparedness and mitigation; its current approach is oriented toward providing technology. The relief problems faced in the Horn of Africa have raised the priority of disaster management for the UN. The UN has also proclaimed the 1990s as the International Decade for Natural Disaster Reduction to promote awareness about disasters and their management. A.I.D. sees an excellent opportunity to play a key role with the UN and other donors through encouraging their effective involvement in disaster preparedness and mitigation, assisting them in defining what that role should be, and ensuring increased coordination among the growing number of international disaster preparedness donors.

B. Evaluation

To prepare for a new strategy in the 90s, OFDA contracted for a review and evaluation of its experience in non-relief assistance over the last decade. Booz-Allen and Hamilton and Labat Anderson, Inc. (LAI) prepared profiles of 478 activities carried out from 1979-1988 with funding of nearly $50 million. The profiles provided part of the data base used in the Management Systems International (MSI) evaluation of these activities.

The Booz-Allen and LAI study indicated that these activities were guided by a Central Program Strategy Statement developed by OFDA in 1979 for its non-relief portfolio. The three goals of the strategy remained largely operative over the decade and through eight changes in OFDA director. They were: (A) effective, rapid emergency relief and rehabilitation; (B) host country disaster preparedness; and (C) early warning systems. Goals B and C were seen as supporting Goal A.

The MSI evaluation found that OFDA had played a leadership role under that strategy in developing more refined approaches to PMP. Earlier emphasis on stockpiling of supplies and development of operational plans gave way to more advanced efforts to develop forecasting and early warning systems, to train search and rescue teams, and to launch public awareness programs. Such preparedness activities further evolved to include disaster mitigation taking into account not only loss of life and destruction of property, but also the devastating socio-economic impact of disasters. OFDA's wide ranging portfolio of PMP activities demonstrated the value and broadened understanding of the PMP approach.

Despite OFDA's success with PMP programs, the MSI evaluation highlighted the need for an updated strategy and clearer criteria for allocation of PMP resources. It also noted insufficient attention to assessing relative effectiveness of PMP activities and ensuring their financial and institutional sustainability.

The evaluation suggested that any strategy for the future consider:

- Increasing priority given to Africa;
- Increasing support for growth of local capacity, especially through national and regional institutional building and first responder training;
- Continuing downward trend in percentage of allocations to technology transfer activities which are not tied to direct impacts on victims;
- Preparing for increase in frequency and severity of man-made, technologically-induced disasters;
- Developing interventions to address the differential effects of disaster on the poor, women, and children;
- Strengthening links with development programs; and
- Developing more well thought-out interventions with clearly identifiable purposes, measures of success, and time frames.

C. Reorganization

To prepare for increased emphasis and higher priority on PMP, OFDA reorganized to create more of a balance between relief and PMP activities. In the summer of 1991, OFDA abandoned its geographic organization which emphasized disaster relief at the expense of the longer term prevention, mitigation, and preparedness. In its place OFDA now has a Disaster Response Division, a Prevention, Mitigation and Preparedness Division, and an Operations Support Division. This reorganization has allowed the new PMP Division to devote full-time to PMP activities. It will make it possible for the PMP Division to provide undivided attention to design, implementation, and monitoring of activities that more closely resemble regular A.I.D. development projects and require that type of continuing attention. It will offer the opportunity for more effective interaction with other A.I.D. bureaus, PVOs, contractors, and other donors. It will also permit an opportunity to explore more effective PMP approaches and to plan and manage long range PMP programs without simultaneously dealing with emergencies.

IV. PROPOSED STRATEGY

A. Goals

Overall goals of the PMP strategy are to:

- Save the greatest number of lives, reduce human suffering, and protect economic assets from disasters.

- Strengthen concern for disasters and their mitigation in how A.I.D. development investments, together with those of other donors and the host countries themselves, are made.

- Lead ultimately to reductions in resources spent on disaster response.

Saving lives and protecting assets is the primary goal for any A.I.D. assistance relating to PMP. The human and economic costs of disasters continue to be ever more devastating in the disaster-prone areas of the world. Cutting those costs is the overriding aim of PMP.

Enhancing the PMP impact of A.I.D., other donor, and host country development investments is another key goal. A.I.D., as an example, spends over $1 billion a year on development assistance in the more disaster-prone countries. Does each A.I.D. investment fully take into account hazard risks? Does each contribute to the maximum extent possible to preventing, mitigating, and/or preparing for disasters? Can A.I.D., in turn, influence other donor and host countries to make their investments more disaster-sensitive?

On post-disaster relief, OFDA spends an average of over $40 million a year (based on FY84-91 expenditures). The level of funding for relief has substantially increased since 1964. To gradually reduce these expenditures is a further major goal of this strategy.

To meet these goals, the strategy has three basic components. One is to heighten disaster consciousness throughout A.I.D.'s strategy planning, project design, and personnel training processes for disaster-prone countries. A second is to provide sharper PMP focus for all A.I.D. programs contributing or with potential to contribute to PMP goals. A third is to provide guidance for supplementary new PMP initiatives. The strategy also defines target countries, establishes priorities for interventions, and develops modules for these interventions. The strategy is intended to provide a framework for and enhance the impact of all A.I.D. resources relating to PMP, not just those specifically available for this purpose to OFDA.

B. Components

To integrate disaster PMP concerns into the programming mainstream of A.I.D. is the **first strategy component.** No one argues about the impact of disasters on development. In the most disaster-prone countries, disaster threats and their management have to be central development considerations.

For A.I.D. programs in these countries, disaster PMP should not be viewed as a separate and additional activity and thus potentially in conflict with A.I.D. efforts to focus and concentrate. Rather disaster PMP should be an integral part of everything A.I.D. does. To achieve such integration in target countries is a major aim of this strategy. Approaches used formerly to achieve similar integration of WID and environmental concerns within A.I.D. will be followed as appropriate. Consciousness-raising and constituency-building will be pursued through a variety of means.

OFDA is working with the Office of Training to introduce disaster concerns into the project design, development studies, and technical/management courses as appropriate. New special training for Mission Disaster Relief Officers will be developed. Special efforts will be made to include disaster PMP on the agenda of Mission Directors' meetings and other programming conferences. Disaster PMP materials will be made available to CDIE for disssemination as part of project planning packages and other distributions wherever possible. As part of the Agency's current rewrite of Handbooks 1-4, OFDA plans to introduce language that will add disaster issues to the checklist of items to be addressed in design of all new development assistance (including project and non-project assistance and food aid).

These and many other approaches drawn from the WID and environmental experience will be used to heighten consciousness and sense of priority for PMP within A.I.D. OFDA recognizes exhortation alone will not be enough. Efforts will also be made through TDYs and use of OFDA regional advisors to work directly and continuously with Missions in the field toward improved PMP integration.

The second component of the strategy is to enhance the PMP impact of all A.I.D. resources that contribute or could contribute to PMP. Much A.I.D. assistance in target countries already contributes to the priority sectors and objectives outlined in this strategy.

PRE/H programs relate very directly to PMP concerns with respect to construction of basic facilities. Famine mitigation and food security are a central component in A.I.D. development strategies for disaster-prone areas of Africa. The major focus of development assistance programs in these areas is increased agricultural production and consumption with full-time and sustained attention to activities such as changing cropping practices, adapting seeds, adjusting prices, and generating purchasing power. Much of the R&D/AGR project portfolio has goals and objectives similar to

those of PMP. In particular, the Collaborative Research Support Programs (CRSP) for commodity technology, soil management, and post harvesting techniques relate very directly to the PMP strategy.

Efforts of the Agency's International Disaster Advisory Committee (IDAC) and programs of the PRE Bureau could contribute significantly to private sector PMP objectives. Disaster preparedness already is a cross-cutting theme in some Missions such as USAID/Dhaka or USAID/Manila located in the most disaster-prone countries. Disaster concerns are being taken into account explicitly in design of most development activities in these Missions.

OFDA recognizes these current and potential contributions to the strategy. It does not seek to duplicate in any way what is being done or can be done better elsewhere in A.I.D. Rather OFDA will attempt to coordinate, facilitate, reinforce, and build-on efforts of Bureaus and Missions that contribute directly or indirectly to PMP objectives outlined in this strategy. OFDA's approach will be to seek a variety of working agreements and arrangements with other A.I.D. Bureaus, Offices, and Missions.

Illustrative of the more effective coordination within A.I.D. to be sought under this strategy is the formal understanding reached between OFDA and PRE/H in February, 1990. The agreement has four key provisions. First, PRE/H has assigned an officer to be official liaison with OFDA, to be current on shelter disaster mitigation techniques, and to review all housing and urban development project papers and USAID strategies to assure appropriate consideration of shelter disaster mitigation measures. Second, OFDA objectives in shelter mitigation are being incorporated into RHUDO training workshops for A.I.D. Missions, governments, non-governmental organizations, and private building trades. Third, RHUDOs will work with A.I.D. Missions and government institutions on a regular basis to insure that shelter/urban development strategies in host countries adequately address disaster vulnerability concerns. Finally, OFDA is funding full-time local contractors in RHUDO offices in Kingston, Quito, and Bangkok and additional contractual back-up support to carry out the above objectives. This integrated working relationship with PRE/H allows OFDA to use PRE/H expertise and resources in helping to meet PMP goals.

A similar working arrangement exists between OFDA and IDAC on private sector PMP initiatives. IDAC energies are concentrated in two areas: (i) working with selected CEOs from the U.S. corporate community to improve U.S. preparedness and response capability for addressing third world disasters, and (ii) deploying special PMP TDY advisory teams from the private sector, at the request of OFDA and USAID Missions, to help disaster-prone countries identify potential disaster situations and appropriate counter measures. Through this close involvement with the U.S. corporate community on PMP-related issues, IDAC is in a position to mobilize important support, within the U.S., for the A.I.D.-sponsored intiatives outlined in this strategy -- especially in those LDCs where there are U.S. affiliate companies.

An agreement is being discussed with R&D/AGR. The food security objectives of R&D/AGR have much in common with the famine mitigation objectives of OFDA. Under consideration is the provision of OFDA PMP resources to R&D/AGR to make use of R&D/AGR's technical expertise, experience, networks, and potential for sustained effort over the long-term to carry out programs that meet the objectives of both offices. A similar agreement will be explored with the PRE Bureau.

To insure planning for A.I.D.'s new multi-million dollar capital projects fund and subsequent implementation includes full consideration of disaster prevention and mitigation concerns and opportunities, OFDA will participate as a member of the Agency-wide Capital Projects Committee which is coordinating design and development of fund projects. Within the FHA Bureau, ways are being sought to develop reinforcing relationships with the Office of Private Voluntary Cooperation (PVC), Food for Peace (FFP), and the Office of American Schools and Hospitals Abroad (ASHA).

With Missions in target countries, OFDA will try to reinforce and expand on PMP elements of programs already part of Mission portfolios. OFDA plans to offer on an annual basis a portion of its PMP resources (up to 25%) which could be used in combination with Mission funds to strengthen PMP elements of development activities. Missions would be encouraged to apply on a competitive basis for these funds which would enhance their capacity to meet both PMP as well as other development objectives.

To stimulate further such cooperation with Mission programs, OFDA will facilitate Mission buy-ins to projects serving mutual objectives. Successful examples of buy-ins to date have been participation by USAID/Guatemala City in Metro Dade preparedness training and use by USAID/Manila of USGS services in connection with the Mt. Pinatubo disaster. OFDA will design future grants/contracts to encourage substantially more such buy-ins.

The third strategy component is to support stand-alone activities that fill PMP gaps in Mission programs or test new initiatives in meeting strategy objectives. These activities more than likely will be fully financed by OFDA. They will be focused on the priority sectors and module objectives outlined below. Stand-alone activities will be developed in full consultation with and maximum paticipation of the people and institutions in the field who are to be the beneficiaries or those most directly involved.

OFDA will seek full Bureau and Mission clearance before undertaking any PMP activity in the field. Agreement will first be sought with Bureaus and Missions on target countries in which OFDA expects to concentrate approximately 80% of its resources. Before initiating any specific activity in target countries, OFDA will consult with Missions and schedule formal project reviews to which Bureau representatives will be encouraged to attend. With the 20% of its resources with which OFDA may be responding to targets of opportunity outside target countries, such as taking advantage of

openings for PMP presented in the aftermath of a specific disaster, Mission clearances will still be obtained. OFDA will not proceed on any given activity in agreed target countries or elsewhere without Mission and Bureau support.

C. Target Countries

To determine proposed target countries for the strategy, OFDA recently completed a disaster vulnerability assessment (An Assessment of Worldwide Disaster Vulnerability, Heyman, Davis and Krumpe, June 6, 1991). Disaster and related statistics were examined for those countries in Latin America and the Caribbean (LAC); Asia, the Middle East and the Pacific (ASP); and Africa (AFR) which had at least 10 disasters from 1964 to the present. A ranking was developed for each region on the basis of this historical disaster data and other measures to approximate human and economic asset vulnerability. Tables 1, 2, and 3 show the rankings for each of the three regions.

Data in the tables include the number of disasters and the number killed and affected to provide an indication of how frequently and severely the country has been affected. The ratio of victims (100 times the number killed and affected) to the current population gives a comparative indication of disaster severity or how significant a share of a country's population has been disaster victims. Long term external debt was selected as an initial way of measuring economic vulnerability since it generally represents economic infrastructure or asset base (a more direct measure of economic infrastructure will be undertaken by OFDA in the future). The country's projected population in the year 2000 is included in order to indicate potential changes in population vulnerability based on differences in projected population growth rates. The countries in each region are ranked in the Tables in descending order in terms of the disaster severity ratio, or how significant a share of the country's population has been victimized by disasters.

Target countries were then selected, taking into account not only this historical disaster proneness analysis, but also estimates by OFDA staff of (1) future hazard vulnerability and host country coping capacity, and (2) whether or not a country is a priority for A.I.D. development programs. In reviewing the list for Latin America, OFDA determined that, among the top countries listed, all should be targets except Panama because of relatively good existing coping capacity. Ecuador was substituted for Bolivia because of the higher earthquake and volcano threat in Ecuador. While only Jamaica and Haiti in the Caribbean were high on the disaster prone list, the entire Caribbean Basin was included as a target because the hurricane threat is common to the entire region and hurricanes have the ability to cause nationwide disasters among the relatively small populations in the region.

TABLE 1
DISASTER STATISTICS
1964 - 1989

LATIN AMERICA AND THE CARIBBEAN

COUNTRY	NUMBER EVENTS	POPULATION 1989	KILLED	AFFECTED	RATIO ((100K+A)/P)	1986 GNP PER CAPITA	LONG-TERM DEBT 1987	POP. GROWTH RATE	PROJECTED POP. 2000
NICARAGUA	21	3,583,165	42,396	2,013,645	1.7851	$790	$6,150,000,000	2.9%	4,797,578
EL SALVADOR	14	5,124,931	23,792	2,326,661	0.9162	$820	$1,647,000,000	1.8%	6,236,187
PANAMA	17	2,373,853	285	2,078,677	0.8846	$2,330	$3,772,000,000	2.1%	2,982,570
GUATEMALA	20	9,116,877	23,984	4,386,124	0.7444	$930	$2,461,000,000	2.4%	11,834,383
PERU	46	21,448,501	70,388	7,126,569	0.6604	$1,090	$13,918,000,000	2.1%	26,957,331
HAITI	22	6,322,198	6,424	3,314,727	0.6259	$330	$673,000,000	1.4%	7,366,914
BOLIVIA	26	6,588,601	884	4,022,953	0.6240	$480	$4,799,000,000	2.1%	8,280,678
JAMAICA	13	2,484,957	364	1,242,588	0.5147	$840	$3,569,000,000	1.1%	2,882,732
DOMINICAN REP.	15	7,106,114	3,548	2,813,158	0.4458	$710	$3,671,000,000	2.1%	8,951,313
HONDURAS	17	5,183,772	8,610	1,213,954	0.4065	$760	$2,796,000,000	3.1%	7,148,681
ARGENTINA	29	31,914,473	879	12,722,567	0.4014	$2,350	$50,389,000,000	1.2%	36,389,268
CHILE	23	12,827,411	1,574	4,348,886	0.3506	$1,320	$18,882,000,000	1.5%	15,110,655
BRAZIL	77	150,758,232	8,368	48,395,893	0.3266	$2,130	$106,887,000,000	2.0%	187,438,965
COLOMBIA	42	31,945,165	25,858	6,817,120	0.2668	$1,230	$15,352,000,000	2.0%	39,719,797
ECUADOR	29	10,262,271	1,665	1,851,934	0.1967	$1,160	$9,056,000,000	2.4%	13,321,189
CUBA	14	10,458,368	2,053	845,991	0.1006			0.9%	11,532,782
COSTA RICA	16	2,953,908	196	247,339	0.0904	$1,480	$3,919,000,000	2.7%	3,959,787
MEXICO	61	86,366,819	12,864	1,910,395	0.0370	$1,860	$96,919,000,000	2.2%	109,724,284
VENEZUELA	13	19,263,376	822	191,506	0.0142	$2,920	$32,749,000,000	2.5%	25,275,219
TOTAL	515	425,905,322	234,056	107,061,211	0.3063	$1,317	$375,269,000,000	2.0%	529,801,963

(Source: An Assessment of Worldwide Disaster Vulnerability, Heyman, Davis, and Krumpe)

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TABLE 2
DISASTER STATISTICS
1964 - 1989

ASIA, THE MIDDLE EAST, AND THE SOUTH PACIFIC

COUNTRY	NUMBER EVENTS	POPULATION 1989	KILLED	AFFECTED	RATIO ((100K+A)/P)	1986/87 GNP PER CAP.	LONG-TERM DEBT 1987	POP. GROWTH RATE	PROJECTED POP. 2000
LEBANON	11	3,300,882	63,471	5,366,500	3.5487	$690	$935,000,000	1.1%	3,722,987
BANGLADESH	107	114,718,395	606,527	239,902,587	2.6199	$490	$8,851,000,000	2.8%	155,438,044
INDIA	181	833,421,982	85,017	1,113,411,882	1.3442	$290	$40,767,000,000	2.0%	1,036,255,480
LAOS	15	3,935,786	724	4,940,000	1.2735	$140	$884,000,000	2.2%	5,000,246
VANUATU	11	159,830	61	168,600	1.0930	$500	$109,000,000	3.2%	226,014
FIJI	18	756,559	197	882,582	1.0869	$1,810	$438,000,000	2.1%	950,881
SRI LANKA	33	16,881,130	9,425	14,962,602	0.9422	$400	$4,226,000,000	1.5%	9,885,109
PHILIPPINES	127	64,906,990	24,135	36,626,045	0.6015	$546	$23,837,000,000	2.7%	87,009,435
YEMEN ARAB REP.	11	6,942,202	2,066	3,097,000	0.4759	$550	$2,155,000,000	3.1%	9,712,758
VIETNAM	36	66,820,544	11,839	21,813,216	0.3442	$190	$8,600,000,000	2.5%	87,674,344
NEPAL	25	18,699,884	4,449	5,218,524	0.3029	$150	$902,000,000	2.4%	24,273,837
CHINA, P. REP.	99	1,112,290,677	269,637	250,535,258	0.2495	$320	$23,659,000,000	1.4%	1,324,500,749
IRAN	47	53,866,523	76,732	2,795,321	0.1943	$1,800	$4,300,000,000	3.4%	77,811,694
KOREA, REP. OF	36	43,347,231	3,869	7,022,848	0.1709	$4,045	$30,644,000,000	1.3%	49,964,927
THAILAND	22	55,524,352	1,656	9,114,511	0.1671	$965	$17,131,000,000	1.7%	66,836,543
PAKISTAN	30	110,487,376	8,427	16,561,957	0.1576	$370	$13,205,000,000	2.7%	148,085,835
AFGHANISTAN	14	14,825,013	1,061	1,424,884	0.1033	$200	$1,800,000,000	2.3%	19,038,251
BURMA	35	40,431,732	3,431	2,687,622	0.0749	$200	$4,257,000,000	2.0%	50,296,644
INDONESIA	122	187,651,143	16,572	8,515,748	0.0542	$400	$45,389,000,000	1.9%	230,814,730
MALAYSIA	16	16,726,766	394	796,631	0.0500	$1,830	$21,675,000,000	2.0%	20,797,631
JAPAN	66	123,220,129	3,706	5,685,702	0.0492	$15,830		0.5%	130,169,231
PAPUA NEW GUINEA	12	3,736,386	213	70,600	0.0246	$720	$2,606,000,000	2.3%	4,798,259
TAIWAN	20	20,233,171	1,130	119,336	0.0115	$4,325	$12,300,000,000	1.1%	22,829,379
AUSTRALIA	17	16,451,955	978	91,065	0.0114	$12,500	$79,600,000,000	1.2%	18,758,718
HONG KONG	10	5,799,330	304	14,761	0.0079	$8,260	$9,600,000,000	1.0%	6,369,719
TOTAL	1,121	2,954,993,908	1,196,013	1,751,743,782	0.6376	$2,292	$357,870,000,000	2.0%	3,658,752,377

(Source: An Assessment of Worldwide Disaster Vulnerability, Heyman, Davis, and Krumpe)

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TABLE 3
DISASTER STATISTICS
1964 - 1989

AFRICA

COUNTRY	NUMBER EVENTS	POPULATION 1989	KILLED	AFFECTED	RATIO ((100K+A)/P)	1986 GNP PER CAP.	LONG-TERM DEBT (1987)	POP. GROWTH RATE	PROJECTED POP. 2000
MOZAMBIQUE	27	14,275,301	281,371	46,908,360	5.2579	$210	$1,700,000,000	1.8%	17,370,441
BOTSWANA	12	1,232,183	183	4,279,058	3.4876	$840	$514,000,000	3.5%	1,790,950
MAURITANIA	19	1,977,446	40	6,176,190	3.1253	$420	$1,066,000,000	3.0%	2,737,275
CHAD	23	4,949,132	5,812	10,137,920	2.1659	$150	$270,000,000	2.3%	6,395,685
SUDAN	24	24,476,290	252,012	23,411,766	1.9861	$320	$8,248,000,000	2.7%	32,811,076
GAMBIA	12	799,437	700	1,218,000	1.6111	$230	$273,000,000	2.5%	1,048,951
ETHIOPIA	29	49,762,492	410,889	35,779,879	1.5447	$120	$2,434,000,000	3.1%	69,422,151
SENEGAL	21	7,506,197	65	7,405,448	0.9874	$420	$3,109,000,000	3.1%	10,501,857
NIGERIA	17	115,315,982	1,004,301	4,883,041	0.9133	$640	$26,057,000,000	3.0%	159,626,177
NIGER	22	7,448,048	512	6,280,682	0.8512	$260	$1,513,000,000	3.2%	10,532,201
SOMALIA	18	8,248,133	37,253	3,035,729	0.8197	$280	$2,280,000,000	3.2%	11,663,592
MALI	22	8,918,448	2,172	4,927,546	0.5769	$180	$1,047,000,000	2.9%	12,214,014
BURKINA FASO	22	8,787,098	1,780	4,475,475	0.5345	$150	$794,000,000	2.6%	11,547,671
MADAGASCAR	18	11,430,269	770	4,689,114	0.4178	$230	$3,113,000,000	3.2%	16,163,415
BENIN	14	4,663,632	274	1,665,812	0.3631	$270	$929,000,000	3.7%	6,955,194
UGANDA	14	17,007,530	361	5,713,961	0.3381	$230	$1,116,000,000	3.4%	24,547,051
SOUTH AFRICA	26	38,509,312	1,424	6,666,615	0.1768	$1,850	$12,100,000,000	2.3%	49,453,579
TANZANIA	22	25,206,263	976	2,743,304	0.1127	$250	$4,879,000,000	3.3%	36,825,664
TUNISIA	13	7,916,184	868	446,956	0.0673	$1,140	$6,415,000,000	2.3%	10,165,864
ALGERIA	19	24,946,073	3,070	982,798	0.0517	$2,590	$19,240,000,000	3.0%	34,531,199
KENYA	12	24,346,250	188	1,110,000	0.0467	$300	$4,978,000,000	4.2%	38,288,446
ZAIRE	14	34,279,472	2,394	1,191,862	0.0418	$160	$7,334,000,000	2.9%	46,946,583
MOROCCO	17	25,605,579	498	516,696	0.0221	$590	$10,840,000,000	2.5%	33,996,739
TOTAL	437	467,526,811	2,008,105	184,653,512	0.8245	$514	$129,059,000,000	3.0%	644,514,415

(Source: An Assessment of Worldwide Disaster Vulnerability, Heyman, Davis, and Krumpe)

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Similarly, in Asia, the top countries were included except Lebanon, Laos, and Vietnam because of current obstacles to implementing any A.I.D. programs, India because of high coping capacity, and Yemen because future vulnerability was not judged to be particularly high. The entire South Pacific region, in addition to Fiji, is included because storms have the ability to cause nation-wide disasters similar to the Caribbean. Indonesia, although lower on the list, is included because it is a large country with a large population, an important A.I.D. program, and significant future disaster proneness, especially to earthquakes and volcanoes.

In Africa, of the top countries listed, all were included except Botswana because of its relatively small population and high per capita income and Nigeria because of its higher coping capacity. The entire Sahel Region is included because of the continuing drought/famine threat. While not on the disaster prone list because of a lack of recorded history of disasters, Angola is included because of its current civil-strife-engendered famine threat.

Within target countries, specific locations and sectors which are most vulnerable to specific hazards will be identified. OFDA funded programs will then be targeted to these specific sectors and sites. Sites already identified are the Quito metropolitan area in Ecuador, the metropolitan Manila region, and the Bicol Peninsula in the Philippines. The focus of PMP programs will continue to be narrowed to specific sites in all target countries, except the Caribbean and the South Pacific where storms tend to affect whole countries. Most vulnerable sites and sectors will be identified through detailed country assessments which combine hazard mapping with identification and quantification of populations and specific economic assets at risk.

To give an indication of the level of A.I.D. programs potentially threatened by disasters in these disaster-prone target countries, the following chart shows A.I.D. development assistance (not including Food for Peace) proposed for FY1992:

Target Country or Region	FY 1992 A.I.D. Development Assistance Program ($ millions)
Latin America	
Nicaragua	$172
El Salvador	150
Guatemala	58
Peru	16
Ecuador	15
Caribbean Basin	140
Asia	
Bangladesh	62
Fiji (South Pacific)	20
Sri Lanka	19
Philippines	320
Indonesia	97
Africa	
Mozambique	36
Sudan	--
Ethiopia	--
Sahel Region	108
Somalia	--
Angola	--

Straight lining FY 1992 totals over the five year strategy period suggests that A.I.D. investments at risk in PMP target countries could total $6.0 billion.

With its own resources, OFDA will allocate up to 80% to target countries because they are the most disaster prone and because concentration in a limited number of countries will enhance program impact and facilitate program management. It is recognized, however, that there are important requirements that will need to be addressed outside these countries, such as the threat of technological disasters, which may be higher in other places, for example, Brazil, Colombia, Turkey, and Eastern Europe. Also, while disaster-proneness can be predicted to a point, there will still be unpredictable catastrophic events giving rise to needs and opportunities that may be outside these areas. For example, if significant disasters occur in non-target countries, experience has shown that the best opportunities for promoting and starting PMP programs are in the aftermath of such disasters and A.I.D. will want to be in a position to take advantage of these opportunities. While most of OFDA's PMP resources will be

concentrated in target countries, up to at least 20% still will be devoted to special situations, needs, and opportunities such as the above outside these countries.

D. Priorities for Intervention

To set a framework of priorities for all A.I.D. resources contributing to PMP and to develop possible new approaches for the strategy in prevention and mitigation, OFDA carried out an analysis of disaster impacts and potential interventions, drawing from its own experience as well as that of a team of experts contracted from Checchi and Company. A decision matrix approach was utilized to facilitate consideration of various options (see following page).

Along the vertical axis of the matrix, the principal disaster types are listed. Tsunamis are not listed because they can generally be considered under either flooding, or in the same manner as storm surges. Landslides have been omitted because they are highly localized phenomena and individualized approaches must be taken for each case. Across the horizontal axis of the matrix are listed those sectors in which disasters cause loss of life or human suffering and economic loss. It is assumed that lives lost or human suffering can be attributed to the impact of a specific hazard within a sector. For example, it is the collapse of non-engineered housing or buildings that is the primary cause of death in earthquakes. It is the loss of crops, or access to food, in famines that results in high mortality.

For each disaster type and sector, or each box formed by the matrix, two questions were addressed. First, what is the impact of the particular disaster on the specific sector in terms of loss of life, loss of income, and impact on the economy either directly (loss of facilities) or indirectly (loss of productivity)? The impact was rated based on the experience of OFDA and its outside expertise on a scale of zero to five, with zero denoting "no impact" and five, "very high" impact. The second question is what realistically can A.I.D. do to prevent or mitigate that impact. The potential for A.I.D. to make an effective intervention was rated "high", "medium", or "low" again based on the experience and judgment of OFDA and its outside expertise.

The matrix shows the results of this analysis. High priority areas, those with both a high impact and a high likelihood that A.I.D. can address the problem, are the boxes with 5 Hs, 4 Hs, 5 Ms, or 4 Ms. These priorities are shown as shaded areas on the matrix. For example, civil conflict/drought are shown as hazards having a very high impact (at level 5) on the sectors of field crops, livestock and markets. Programs such as altering planting practices, varieties, and crops or improving storage or tapping new underground sources of water were determined to have high potential for effectively mitigating the impact of these hazards. Also these are programs A.I.D. has had experience with and do not require resources beyond levels likely to be available to A.I.D. Thus Hs were assigned to indicate a high potential for A.I.D. to address the threats effectively. Similarly, earthquakes and cyclonic storms were determined to have

DECISION MATRIX

	FOOD PRODUCTION									HOUSING AND BUILDING															ECONOMIC ENTERPRISE						HEALTH	
	Agriculture			Livestock			Fishing			Housing					Public Bldgs			Infrastructure							Small Business			Industry				
	Field Crops	Facilities	Markets	Animals	Facilities	Markets	Boats	Facilities	Markets	Low Income	Moderate Income	Gvt Built Housing	Bldg. Mat. Products	Gvt Bldgs.	Schools	Hospitals	Roads	Bridges	Water	Sanitation	Electricity	Gas Lines	Communications	Buildings	Markets	Operating Capacity	Plants	Markets	Operating Capacity	Medical	Public Health
Earthquakes	0	3M	0	0	1L	0	0	2L	0	6H	3M	5L	5L	3L	6M	6H	3L	6M	3M	2L	6M	6M	4L	5L	0L	6H	6M	2L	6M	5L	1M
Volcanoes	4L	4L	4L	1L	1L	1L	0	0	0	5L	3L	0	3L	3-5L	3-5L	3-5L	3L	3L	1L	1L	1L		2L	3L	3-5L	3-6H	3L	2L	3L	1L	1L
Cyclones (Wind Effect Only)	5M	2L	5L	5L	5L	5L	6M	5L	5L	6H	2M	0L	5L	2M	2M	2L	1L	3L	1L	1L	6M		5L	3L	3M	6H	3L	2L	3-6M	2L	1L
Storm Surge	5L	5L	5L	5L	5L	2M	5L	5L	5L	5L	5L		5L	3L	4L	4L	5L	5L	5L	5L	5L	3L	5L	5L	5L	5H	5L	2L	5L	2L	3M
Flooding (Riverine)	5M	3L	5L	5L	5L	3M	2L	3L	5L	6M	3L	0	5L	4M	1M		5L	3L	3L	3L	2L	1L	2L	3L	3M	6H	3M	4L	4H	2L	3M
Flash Floods	1L	1L	0	1L	1L	1L	0	0	0	5L	3L	0	2L	0	0		3L	3L	0	0	3L		2L	3L	0	6H	1L	1L	2L	1L	1L
Famine	5H	0	5H	5H	0	5H	0	0	0	0	0	0	1L	0	0	0	0	0	6H	5L	0		0	0	5L	5L	0	0	0	6H	6H
Drought	5H	0	5H	5H	0	5H	0	0	0	0	0	0	1M	0	0	0	0	0	5H		0		0	0	6H	3L	0	0	0	3L	3M
Insect	5L	0	3H	4L	0L	3M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	3L	0	0	0	0	0	0
Civil Conflict	5L	3L	5M	5M	3L	5M	2L	3L	3L	5L	5L	2L	4-6M	5L	5L	4L	5L	5L	2L	0L	5L	5L	5L	5L	6H	5L	3-5L	5	5	5M	6H
Technological Hazards	4L	0	4L	4L	0	4L	0	0	6H	2L	0	0	0	3L	2L	0	1L	4L	5M	1L	1L	1L		3L	2L	2L	4L	5L	5M	5L	5H

Numbers denote level of impact of the disaster on the sector in terms of loss of life, facilities, income or productivity; numbers range from zero indicating "no impact" to five indicating "very high" impact.

Hs, Ms and Ls denote potential for OFDA to make an effective intervention with H indicating "high," M indicating "medium" and L indicating "low" potential.

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high impacts on low-income housing and small businesses but simple and inexpensive building practices and materials can be very effective in reducing the impacts of these disasters. Hazardous chemicals and industrial accidents can have severe impacts on the health of surrounding populations but these impacts can be mitigated or entirely eliminated through appropriate disposal practices, pre-planning, training, and coordinated action. Such activities also enhance preparedness for natural disasters.

Shaded areas are distributed throughout the matrix indicating that priorities for possible interventions exist for at least some hazard in every sector. But the shaded areas tend to be concentrated more in the food production, low income housing, small enterprise, industry (operating capacity), and health sectors than in others. They also are concentrated more with respect to earthquakes, cyclones, and famine/drought than other hazards. These concentrations were selected as initial priorities for intervention.

These priorities were then reviewed in the light of

- support for A.I.D. goals and development priorities,
- relation to programs and priorities of other donors, and
- impact on strategy goals of reducing lives lost and reducing expenditures on relief.

It was determined that basic facilities (combining low-income shelter and small enterprise, and life-line facilities), food production (combining agriculture and livestock), and health/industry had priority not only in terms of the decision matrix but also in terms of A.I.D. goals. It was also determined that emphasizing these sectors would provide a good fit with other donor programs. The development banks routinely fund large public buildings, infrastructure, and industrial facilities and are likely to give mitigation of their losses a high priority. While working with the banks to ensure effective mitigation with respect to engineered infrastructure, A.I.D. can appropriately concentrate on basic facilities, food production, and health/industry which have lower priority for the development banks. With respect to strategy goals, it was agreed that since disaster impacts on basic facilities and food production cause the most deaths and have resulted in the highest levels of relief expenditures, giving priority to these sectors responds to strategy goals as well. OFDA does not expect a direct relationship between PMP investments and reduced deaths or diminished relief expenditures, but does anticipate generally positive results on deaths and relief from successful PMP programs.

It was further agreed that disaster management is a sector which has performed and can continue to perform a critical role in reducing the impacts of all hazards on all sectors. Early warning, public awareness, evacuation plans, trained first responders and disaster managers all contribute significantly to reducing disaster impacts. Disaster management therefore was also cited as requiring continuing priority in the strategy.

After taking these considerations into account, final priority interventions were identified. With the sectors and disaster types listed in priority order from top down and left to right, the X's mark areas of priority, as follows:

	Basic Facilities	Food Production	Health/ Industry	Disaster Management
Famine		X		X
Conflict		X		X
Earthquake	X			X
Cyclones	X			X
Floods	X			X
Volcanoes				X
Technological			X	X

It was assumed that prevention interventions (which can potentially avoid disaster impacts) should be preferred to mitigation (which only reduce disaster impacts). However, to the extent prevention implies heavy capital expenditures (such as dams or other infrastructure), it was agreed that such interventions would be beyond the limit of A.I.D.'s resources and more appropriate for the development banks. Some prevention, such as eliminating the threat of a technological hazard or eliminating the threat of famine from a drought, can be achieved with more modest investments through programs already being implemented by A.I.D.. Such programs will have a high priority under the strategy. Nevertheless, the expectation is that more activities under the strategy will be in mitigation/preparedness than in prevention.

Prevention and mitigation interventions in target countries for basic facilities and food production will have highest priority under the strategy. Disaster management programs which have achieved positive results in the past will be accorded continuing priority. Allocations for health/industry to prevent and mitigate technological hazards will also have priority although they will not be concentrated in target countries because the principal threats from this type of hazards lie outside the main target countries, in more advanced and newly industrialized developing countries and Eastern Europe.

To explore opportunities to use the private sector both in stand-alone activities and in support of the above interventions, funds will be allocated to activities recommended by the International Disaster Advisory Committee (IDAC). The Committee was established in 1991, with Mrs. Marilyn Quayle as chairman, to help increase private sector involvement in disaster relief and mitigation. IDAC has been working closely with selected CEO's from the U.S. corporate community to improve the

quality and timeliness of the U.S. relief response to third world calamities. Through their contacts in disaster-prone countires, IDAC staff have also helped identify opportunities for experimenting with mixed public-private PMP undertakings in several LDC's.

To support the above interventions, OFDA intends to fund special studies including country hazard and mitigation audits, feasibility studies, evaluations, cost effectiveness measures, and information systems.

A summary of priorities and proposed percent allocations is as follows. From its resources, OFDA proposes to program for PMP over the strategy period approximately $75 million which is one quarter of OFDA's estimated budget for both PMP and relief. While the proportion is arbitrary, OFDA believes $75 million combined with other contributory A.I.D. programs will produce significant impact in achieving strategy objectives, protecting A.I.D. investments, and potentially reducing relief expenditures. Levels are indicative and will be adjusted based on experience, feasibility study results, and evaluations.

Intervention	Allocation
Basic Facilities	30%
Food Production	20%
Disaster Management	20%
Private Sector	10%
Health/Industry	10%
Special Studies	10%

E. Modules

The proposed strategy will be implemented through six modules described below. A priority for efforts under each sector module will be to influence those policies that impact on PMP. Objectives, approach, and measurable indicators of progress are indicated for each module. Modules cover all A.I.D. resources contributing to PMP, not just those of OFDA.

1. Basic Facilities

Activities under this module will mitigate disaster impacts on basic facilities through expanded use of disaster-resistant materials and practices and insurance

programs. Activities under this module will also support general improvements in policies, planning, and organization for disaster mitigation.

Objectives

- Promote use and local manufacture of improved disaster-resistant materials and techniques for basic facilities.

- Promote participation of the corporate community in creation of national and local strategies to reduce hazard-induced risks to the built community.

- Encourage and expand basic facilities insurance programs.

- Improve local planning and execution of disaster PMP.

Approach

Most activities under this module will be carried out under an agreement signed between OFDA and PRE/H in February 1990 in which the two offices agreed to pool resources and work together in meeting mutual objectives. PRE/H RHUDO offices in Kingston, Quito, Bangkok and possibly Central America will have major responsibility for implementation of proposed basic facilities activities. In addition to their implementation role, an important objective of RHUDO participation in the program is to achieve full integration of disaster PMP concerns across the entire range of housing and urban development activities in which RHUDOs become involved. OFDA plans for RHUDOs to help serve as models for similar integration of PMP concerns in other A.I.D. offices and missions.

Emphasis will be placed on the importance of private sector participation in the working out of government strategies for insulating the built community against heavy destruction or loss from natural or man-made hazards. Industry involvement will be needed at two levels: (i) providing technical insights, at the national level, on the kinds of incentives (e.g. tax relief) needed to accelerate hazard mitigation practices in development/design/construction, and (ii) cooperating with local authorities and community leaders, at disaster prone-sites, in devising multi-year strategies for reducing risks to the local built community from potential hazards.

Some of the activities in this module are experimental. Preliminary studies will be needed to address how insurance industries in target countries can be accessed and utilized. It is anticipated that activities will begin modestly in FY1992, focused primarily on feasibility studies, and will increase in FY1993 through FY1996 based on the results of those studies.

Measurable indicators

- Number of additional basic facilities (new or old) built (or improved) with improved disaster-resistant materials, designs, and practices; training programs promoting their use; changes in import duties, taxation, pricing structures and low-interest programs to encourage their use;

- Number of builders, carpenters, masons, etc. using disaster-resistant materials and building techniques;

- Number of private sector suggested measures adopted within national regulatory/incentive frameworks created to accelerate PMP practices;

- Number of "triangular relationships" (authorities, private sector, community leaders) established and functioning in disaster-prone locales;

- Market-like incentives used to encourage the adoption of safer building practices;

- Number of sources of locally produced materials used for mitigation;

- Changes implemented in import requirements and/or prices to discourage use of non disaster-resistant building materials;

- Number of basic facilities built or retrofitted to withstand earthquakes and hurricanes;

- Number of new insurance programs and number insured; and

- New measures taken by host countries and USAIDs to improve planning for disaster PMP regarding shelter.

2. Food Production

Activities under this module will mitigate early stages of famine in target countries through adjusting agricultural policies and practices, improving storage, testing insurance schemes, and drilling wells.

Objectives

- Identify, develop and test policies, interventions, and improved coping techniques which reduce the threat of famine.

Approach

On-going A.I.D. programs, especially in Africa, address food security as a priority development issue. OFDA will coordinate closely with these programs and seek to enhance their PMP orientation wherever possible. To supplement these programs, OFDA will, through a possible OYB transfer to R&D/AGR, add a PMP focus to several programs of that office which address the module objective. OFDA has also requested proposals from PVOs for support of PVO activities that are contributing or with adjustment could contribute more to the objective.

Field concentration will be on famine-threatened countries where A.I.D. does not currently have significant programs. Such countries are Angola, Sudan, Ethiopia, Somalia, Mozambique, Liberia, and Laos. Famine-prone countries from other regions will be eligible to participate. It is anticipated that execution of some field interventions will begin in FY1992. Initial focus for field interventions will likely be Ethiopia, Angola, and Sudan.

Measurable indicators

- Number of pilot sub-projects replicated, and effectively using traditional coping techniques to mitigate impending famine;

- Number of alternative or varietal crops (or ones with different growing seasons) introduced; acreage of alternate crops harvested; tons of alternate crops sold at market;

- Additional tons of crops stored in improved storage facilities;

- Number of people with access to new water supplies (gallons per person per day);

- Policy pricing changes benefitting famine-threatened populations; and

- Number of persons better able to cope with the threat of famine.

3. Disaster Management

Activities under this module focus principally on preparedness. Constituency building is another important element in these activities.

Objectives

- Improve institutional capabilities for disaster management, including effective early warning, evacuation, and response systems.

- Respond to the need, within geographic regions, for increased and better structured information-exchange on the most effective ways for involving the business community in PMP.

- Adapt successful disaster management and first responder training in Latin America to target countries in the Caribbean, Asia and Africa.

- Build an understanding in A.I.D., other donor organizations, PVOs, and host countries about disasters and the role of PMP.

Approach

Activities will continue and expand on the successful efforts of prior years to train first responders and disaster managers, upgrade institutions and organizations needed for disaster response, and promote public awareness. In developing training, institutional strengthening and public education activities:

- A.I.D. will seek to develop constituencies, create a demand for mitigation and preparedness actions, promote regional and/or national self-sufficiency in disaster training, improve host country administrative and technical capacity to plan for, manage and mitigate disasters.

- A.I.D. will use an approach to training, institutional strengthening, and public education that ensures problems are defined and solutions conceived in a wide versus narrow context.

- A.I.D. will conduct special studies to assess, document and disseminate the benefits and impact of training, institutional strengthening and public education interventions.

- A.I.D. will use multiple training approaches - policy dialogue forums, conferences and seminars, exchanges, networks - to achieve strategy objectives. Training will also be focused on multiple target groups - policy makers, development planners, public education systems, private sector personnel as well as A.I.D./W and field personnel. Emphasis will be given to programs at the regional and national levels, versus programs in the U.S.

- A.I.D. will test and adopt learning methodologies and change strategies that have been proven to be effective in other programs. Emphasis will be given to adopting models and approaches that build on and strengthen locally indigenous resources, capabilities and expertise.

Working with other donors and regional organizations, OFDA will give special attention to the need for regional PMP clearing-houses on private sector PMP issues. In

this connection, OFDA has recently entered into a collaborative arrangement with the Asian Disaster Preparedness Center (ADPC) under which the Center will monitor and assist pilot initiatives aimed at increasing the business community involvement in PMP strategic planning and operations in selected disaster-prone Asian countries. In this way, fresh ideas and experimental approaches will be disseminated within the region in hopes of being applied/adapted to local settings. The Center intends to develop instructional materials on private sector participation in PMP for use in its own seminars and in university-sponsored courses throughout the region. Also, by altering the mix of its invited participants, the Center will be able to bring about a sorely needed dialogue between public and private sector disaster managers, in the region, on PMP issues.

A relief strategy to be completed by OFDA in FY1993 will provide additional focus for activities under this module.

Measurable indicators

- Number and types of in-country and regional disaster networks created;
- Number of health sector disaster management plans and programs developed, number of potential epidemic situations diagnosed and response measures taken;
- Number of effective early warning systems and evacuation plans installed and operational;
- Number of school systems in target countries and areas that have integrated a disaster education component into their curriculum;
- Number of target countries and agencies that are effectively meeting their own disaster training needs; and
- Number of public awareness campaigns for disasters organized and conducted by host country agencies.

4. Private Sector

PMP programs in most LDC disaster-prone countries are still in a rudimentary stage. The resources (talent, time, money) needed to fully launch these programs are considerable and beyond the limited means of government bureaucracies and aid agencies. A network of entities outside government circles -- businesses, voluntary organizations, and local communities -- needs to be drawn into pre-disaster planning and operations to help mitigate the effects of major disasters. The business community, in particular, with its commitment to the local community, its technological, logistical, and

financial capabilities, represents a vital -- and virtually untapped -- resource which needs to be mobilized in pursuit of more effective PMP strategies.

Objectives

- Establish national regulatory/incentive frameworks which result in accelerated adoption of disaster mitigation and prevention practices.

- Establish "triangular relationships" in selected disaster-prone locales, which form the foundation for community-sponsored and executed disaster PMP strategies.

- Create constituencies within disaster management and development circles to provide support for the new public-private collaboration on disaster PMP.

Approach

Until recently, little thought had been given within disaster management circles to the benefits that could flow from an increased involvement of the business community in PMP strategies. Consequently, there are few "how-to" guidelines or "lessons-learned" to draw on. The priority task under this module will be to help generate a set of "first generation" activities which will demonstrate that disaster PMP efforts can be made more effective with the participation of the business community. OFDA will work closely with the Private Enterprise Bureau (PRE) in assisting USAID Missions to address requirements udner this module.

The initiatives under this module will be carried out at two levels: (i) using private sector talents and energies to help governments create a national regulatory/incentive framework which results in the adoption of disaster mitigation and prevention practices in key focal areas (e.g. construction, insurance, etc.) and (ii) establishing a "triangular relationship" (authorities, private sector, community leaders) in selected disaster-prone areas with a locally-based industry playing a key support role in the development of community-sponsored PMP strategies.

In addition to these pilot operations, there is a need to build constituencies, within disaster management and development circles, which are prepared to endorse and support the private sector-PMP initiative. Lingering public-private sector mistrust needs to be overcome. State-of-art information on issues related to the involvement of the business community in PMP, as well as the benefits derived therefrom, must be collated and disseminated for deployment elsewhere. International bodies, regional trade and development associations, private voluntary agencies, the academic community -- all have to be enlisted in the effort to curtail disaster losses and damages through closer public-private sector interaction.

Measurable indicators

- Number of disaster-prone countries which incorporate formal input from the business community, on a regular basis, in the formulation and execution of their national PMP programs.

- Number of first-phase, national regulatory/incentive "PMP frameworks" that have been devised with business community participation and assistance.

- Number of first-phase, community-sponsored PMP strategies that have emerged and are being acted on - as a result of industry participation in PMP "triangular" planning and implementation schemes at selected disaster-prone sites.

- Degree of endorsement and tangible support for the private sector PMP initiative delivered by those constituencies targeted under this module for sensitization.

5. Health/Industry

Advanced industries in developing countries operate in a much different environment than similar industries in advanced countries. Generally central to developing countries' development strategies, they are often subject to extra political pressure to produce. Less educated personnel are operating advanced technologies and tend to lack previous complex industrial experience. The facilities operate at the margins with a fragile supporting infrastructure. Local economic factors contribute to an ever increasing urbanization around these facilities. This combination of factors is an invitation for large scale disaster. Activities under this module are designed to improve accident prevention and mitigation capabilities in specific high risk areas and encourage replication of those concepts to other areas.

Objectives

- Improve capabilities of local authorities and corporate managers to prevent or mitigate technological disasters.

- Dispose of hazardous pesticides and other chemicals (especially those financed by A.I.D. programs) and promote replication of disposal practices used.

Approach

Local private and public sector resources will be mobilized in up to six "threatened" sites to identify hazards and develop measures to reduce risks through a broad range of training activities and incentives. Skills and networks developed through these activities will be readily transferable to natural disasters.

Another international agency that has been very active in the health/industry area is UNEP -- through its three-year old APELL initiative. APELL staff have put together an excellent "how-to" manual on engaging community-level resources (public and private) in addressing petro-chemical related industrial threats. OFDA has held several planning sessions with APELL staff.

A special category of technological hazard is the accumulation of surplus and outdated pesticides in developing countries worldwide, but especially in Africa. The risk to human and environmental health is both acute and constant, and communities surrounding these pesticide stores are at especially great risk. An activity is proposed under this module which addresses this special problem.

Measurable indicators

- Number of pilot projects initiated in urban areas;
- Number of programs replicated successfully in other locations;
- Quantity of hazardous materials eliminated;
- Number and extent of replications of improved disposal methods;
- Number of people and value of economic assets protected.

6. Special Studies

Activities under this module in FY1992 and FY1993 will provide the data bases, information systems, and feasibility studies needed to support initiatives in the other modules. In later years the emphasis will be more on continuing evaluation.

Objectives

- Develop data base for PMP programs in vulnerable sites.
- Develop approaches and information for measuring and improving impact of PMP activities.

Measurable indicators

- Number of site audits completed.

- PMP resource allocation decisions based on feasibility studies, hazard/economic asset risk assessments, and cost-effectiveness methodology.

F. Other Agencies

PMP goals will be further advanced through various forms of interaction and collaboration with other agencies. PVOs have traditionally played a major role in relief and are focusing increasingly on disaster PMP. On a bilateral basis Japan (JICA), Canada (CIDA), and Sweden (SIDA) are leading among the lending countries in the provision of PMP assistance. On a regional basis the Inter-American Development Bank, the OAS, PAHO, the Asian Development Bank, and the EEC provide assistance in PMP. On the multinational level, the UNDP, UNDRO, UNEP, and UNESCO in the UN system along with the World Bank also support disaster prevention, mitigation and preparedness activities. With these other agencies, OFDA will seek to:

- Develop replicable project initiatives and approaches which other agencies can undertake.

- Leverage resource allocations for activities which are of high priority for OFDA.

- Encourage on-going and new efforts by other agencies to build constituencies for PMP through programs such as:

    - UNDP training for government officials and UNDP staff in PMP measures and disaster management;

    - PAHO training and conferences for public health government officials in disaster management and preparedness;

    - UNDP initiated and other donor agency supported training at the Asian Disaster Preparedness Center; and

    - OAS efforts to strengthen national capacity to incorporate hazard data into development projects.

OFDA will also seek to exploit opportunities presented by the UN designation of the 1990s as the International Decade for Natural Disaster Reduction (IDNDR). The UN General Assembly proclaimed the IDNDR in 1989 (resolution 44/236) to stimulate

a world-wide effort by the international community to reduce loss of life, physical damage, and economic disruption caused by natural disasters. The focus of IDNDR is on improving and building capabilities at the national level to deal more effectively with natural disasters. A network of national and international committees has been established to carry out IDNDR objectives.

Many activities planned under IDNDR auspices, such as PMP risk analysis, training, planning, and constituency-building, closely parallel proposed activities under this strategy. OFDA will maintain close coordination with IDNDR activities to ensure opportunities for cooperation and mutual benefit are not missed.

IDNDR presents a special opportunity for constituency-building. Lack of constituency for PMP is an important constraint. OFDA will try to take advantage of the attention generated by IDNDR to spread the PMP message in every way possible. The national and other committees established under IDNDR are a critical resource which OFDA will use to support and guide strategy initiatives.

G. Management

OFDA fully recognizes that cooperation with Bureaus and Missions on a PMP strategy must be considered in the context of continuing pressures to concentrate and focus programs and to adjust to ever tighter OE and personnel constraints. For this reason, OFDA's approach will be to add as little as possible to Mission management burdens where there are Missions and to be self-contained where Missions are absent.

OFDA will use management in place to the maximum extent possible. When OFDA cooperates with programs planned as part of Mission portfolios, OFDA will rely on Mission management. Where additional management is required as a result of an OFDA-financed add-on, for example, OFDA would be prepared to supply necessary funding for that support.

Through the agreement with PRE/H, management support of the RHUDOs has been enlisted. Similar agreements such as those under consideration with R&D and PRE will build in arrangements for needed management.

OFDA will also expand its group of regional advisors. Currently four are in Costa Rica serving the entire LAC region and one is in Ethiopia covering all of Africa. A second advisor will be added in Ethiopia, and two new advisors will be added in Asia. Advisors recruited will have project management skills and experience. They will be expected to assume some of the field management responsibility for OFDA's PMP programs. For programs in Sudan and Somalia where Missions are currently absent, OFDA will have its own field representation.

H. End of Five-Year Status

With successful implementation of this strategy, there will be in five years a significant change from the present. By FY1996 consciousness about disaster impacts and their management will have been raised throughout A.I.D. A.I.D. assistance strategies and program processes in target countries will more directly and successfully integrate concern for disasters and PMP. A.I.D. employees will be better trained to provide country strategies and assistance programs that are more sensitive to disaster issues in target countries. There will have been a major shift in emphasis toward prevention and mitigation in A.I.D. assistance.

Basic facilities activities will be in progress based on project design and feasibility studies and experimentation in the early years with expansion thereafter. Results from shelter activities will include retrofitted houses, construction and building trades workers skilled and practiced in disaster resistant building practices, disaster resistant building materials available at reasonable costs, and insurance programs designed for low income housing.

In **food production**, close cooperation and mutually reinforcing relationships will have been developed with the Africa Bureau's food security programs in target countries. In target countries where A.I.D. Missions are currently absent, famine mitigation programs will have been tested with PVOs with the more promising ones being replicated.

In **disaster management** preparedness training for target countries in Latin America will be in the process of being replicated in Asia and the Caribbean. With more focus on local participation in mitigation and prevention activities, public awareness campaigns will have become more important components of continuing preparedness programs.

Private sector activities will have established models for disaster preparedness and management which combine local businesses, community and trade associations, and government officials in disaster planning. US multinational firms working in target countries will have developed and shared with local leaders industrial disaster management plans. US trade and professional associations will be joined in a network for identifying and pooling disaster management expertise. Ways to use market mechanisms to promote PMP will have been identified and implemented. .

Approaches will have been designed, tested and replicated for **chemical industry disaster management and hazardous waste disposal**. Projects focused in metropolitan areas in relatively advanced developing countries will have trained local officials and plant managers in industrial disaster management, and initiated public awareness programs.

By FY1996 **special studies** will be completed on planning for the next five year strategy. Evaluations will have been undertaken of new initiatives launched between FY 1993 and FY1996. Based on these evaluations, the outlines of future directions will be emerging. It is probable that some new target countries will be identified. It is also anticipated that by FY1996 A.I.D. will have more precise methodologies for measuring the impact of PMP activities on saving lives and protecting economic assets.

By FY1996 other international donor agencies will be much more active in the PMP field than in FY1992. Through A.I.D.'s example, other donors will be moving to more integration of PMP concerns with respect to all their development investments. The level of financial support for PMP from the donor community will be significantly higher than that provided in FY1992. A.I.D. will have created joint projects with the World Bank, the Inter-American Development Bank and the Asian Development Bank in PMP.

With successful implementation of this strategy, A.I.D. will have revitalized its leadership role among donors in stimulating and carrying out new initiatives in disaster prevention and mitigation. It will be affording better protection for A.I.D. development investments. Most importantly, it will be making measurably greater impacts on reducing human and economic effects of disasters per dollar spent on PMP.

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