The U.S. Government Foreign Disaster Assistance Program

Committee on International Disaster Assistance
Commission on Sociotechnical Systems
National Research Council

NATIONAL ACADEMY OF SCIENCES
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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the Councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the Committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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Foreword

On October 6, 1975, Daniel S. Parker, at that time Administrator of the Agency for International Development (AID), Department of State, wrote to Dr. Philip Handler, President of the National Academy of Sciences (NAS), inviting the Academy to submit a proposal for a program of studies on international disaster assistance. The invitation expressed Administrator Parker's concern that American technical and scientific developments were not being brought to bear with full effectiveness in assisting disaster-prone nations of the world in their preparations for the inevitable occurrences of future disasters or in the relief efforts that follow such emergencies. Preliminary discussions with the staff members of the AID Office of Foreign Disaster Assistance (AID/OFDA) suggested that an NAS committee composed of representatives of many disaster-related fields could assist greatly in identifying problems in disaster prevention, preparedness, planning, and relief operations to which scientific and technical knowledge could be applied. An NAS proposal to form such a committee was submitted to AID in March 1976 and subsequently approved on May 17, 1976. A Committee on International Disaster Assistance (CIDA) was formed in the National Academy of Sciences-National Research Council, Commission on Sociotechnical Systems, during the summer of 1976; it began its deliberations in September of 1976. The Agency for International Development has provided financial support for all activities of the Committee and its Panels.

As defined in the original proposal, the Committee's mandate has been to provide the AID/OFDA with guidance and assistance on (1) the U.S. role in international disaster assistance, (2) the identification of major problems in the AID/OFDA international disaster assistance program toward which scientific and technical knowledge can be applied, (3) an assessment of the state of the art in scientific and technical fields relating to disaster assistance, and (4) the identification of deficient areas of scientific and technical knowledge of disasters that need to be addressed in future research and development activities.

These tasks have encompassed some extremely complex problems in the application of scientific and technical knowledge to national and international policy issues. International disaster assistance[1] involves the identi-

[1]Throughout the report the phrase "international disaster assistance" will be used to mean the following: "efforts on the part of several nations and the United States to give assistance to a country, often a developing country, that has suffered a disaster."

fication of techniques to monitor a wide range of disaster needs; the collection and processing of a wide variety of information that is relevant for determining an appropriate response; the design and organization of complex delivery systems; the development of techniques necessary to coordinate the actions of individuals, organizations, and governments; the responses of other donor governments and international organizations; and the delivery of goods, services, and information between societies that have quite different technological capabilities and patterns of social organization and culture.

In light of the complexities of the tasks that confronted it, the Committee decided to concentrate its initial efforts on two kinds of activity. First, the Committee determined that a thorough review and assessment of the U.S. government role in international disaster assistance was a fundamental prerequisite for identifying problems in the U.S. program toward which scientific and technical knowledge might be applied. This report is based on that review and assessment. Second, the Committee simultaneously began to assess the state of the art in several scientific and technical fields that related to frequently mentioned disaster problems—problems that were also of interest to the AID/OFDA staff. In that regard, a special workshop was held on March 28-29, 1977, to review the state of the art on emergency shelter, emergency communications, search and rescue, and the use of space satellites for hazard monitoring, warning, and damage assessment. Participants included scientific and technical experts in the various topics chosen, the members of the CIDA and its special Panels, the AID/OFDA staff, and disaster response officials from other countries.[2]

After extensive deliberations, the Committee determined that the future application of scientific, technical, and administrative knowledge to international disaster assistance requires a much clearer conception of the foreign disaster context and the historical relationship of the U.S. government program during the past 13 years to that context. Thus a major first-year task of the CIDA was to examine and to interpret the historical evolution of the U.S. government program—its primary foci of attention, the content and meaning of its activities in light of the pre- and postdisaster problems that could be addressed by disaster relief efforts, and the relationship of the U.S. government program to that of other international donors.

The Committee's approach to this problem was to create four panels whose assignments were to consider a series of related issues implied by their titles:

Panel 1—Review and Assessment of Available Information
Panel 2—Role of Technology in International Disaster Assistance

[2]The proceedings of the "Workshop on the Role of Technology in International Disaster Assistance" is being published separately.

Panel 3—Coordination of International Disaster Assistance
Panel 4—Relationship of International Disaster Assistance to Long-Term Development

The work of Panel 1 was instrumental both for examining the historical record of the AID/OFDA activities and for isolating the role of technical information in disaster assistance programs. Panel 2 organized the previously mentioned workshop and contributed many ideas about the problems of technology application. Panel 3 considered the complex problems of communication and coordination among the many public and private international disaster assistance organizations, both foreign and domestic. As a result, the Panel provided a clearer understanding of the historical relationship of the U.S. government program to that of other international donors. Finally, Panel 4 identified the broad range of pre- and postdisaster problems that are amenable to international disaster assistance and outlined possible reciprocal relationships between short-term disaster relief programs and longer-term development programs.

This report is designed to serve two basic functions. First, it summarizes the Committee's review and assessment of the U.S. government role in foreign disaster relief,[3] one that has resulted in a number of specific recommendations for the improvement of the AID/OFDA's disaster assistance program. Second, the report outlines in considerable detail a perspective on international disaster assistance. That perspective is both analytical and normative—analytical in the sense that it gives the Committee's interpretation of the complexities of disasters and international disaster events, normative in the sense that it outlines issues relating to the underlying values and objectives of international disaster assistance.

The report is organized into five chapters and an appendix. Chapter 1 outlines the key technical and value problems that need to be addressed in international disaster assistance programs. Chapter 2 discusses the history of the U.S. foreign disaster relief program and briefly summarizes the more recent development of the United Nations Disaster Relief Office. Chapter 3 discusses both the concept of disaster and its implications for international disaster assistance policies. Chapter 4 outlines the committee's conception of the information required for effective pre- and postdisaster responses and then describes the various types of information currently being collected by the AID/OFDA. Chapter 5 summarizes the findings and recommendations of the Committee's first-year studies. An appendix supplements the basic recommendations by providing a detailed set of recommendations on the AID/OFDA information-management system.

[3]Throughout the report and especially in Chapter 2 the phrase "foreign disaster relief" will be used to mean the following: "efforts on the part of the United States, acting unilaterally, to give assistance to a foreign country that has suffered a disaster."

In preparing this report, the Committee reviewed the existing studies, case materials, and technical literature on foreign disasters (bibliographies are presented at the end of the report) and developed a series of working papers on selected aspects of the problem. The report represents a summary of the consensus views reached in many discussions of the Committee and its Panels. The Committee did not intend to secure agreement of all of its members and the members of its four Panels to every word in this text. However, this text is believed to reflect accurately the major concerns that have been expressed by the Committee and Panel members and to present the recommendations that the Committee wishes to bring to the attention of the AID/OFDA and other national and international agencies involved in international disaster assistance programs.

This presentation should be viewed as the beginning of a process of clarifying the goals of international disaster assistance programs and of insuring a more effective utilization of scientific and technical knowledge in the administration of those programs. The Committee hopes that the perspectives and findings reported here will contribute to the continuing efforts of many public and private agencies to prevent, to mitigate, and to relieve the damaging human, ecological, and physical consequences of disaster.

As Chairman, I thank the Committee and Panel members for their many hours of hard work. On behalf of the Committee, I also want to pay special thanks to the Committee staff for their many valuable contributions to this study. Charles E. Fritz, Executive Secretary, was largely responsible for launching the Committee's efforts and, based on his many years of experience in disaster research, he provided wise counsel and assistance throughout the course of the study. Gary A. Kreps, Staff Officer, carried daily responsibilities for administering the work of the Committee and made major contributions both to the analytical work and to the preparation of the final report. Helen D. Johnson, Administrative Secretary, and Sharon D. Carpenter, Secretary, provided cheerful and efficient administrative support for all the Committee's activities throughout the course of the study.

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Chapter 1

Disaster Response as a Decision-Making Problem

Statement of the Problem

A decision to respond to a particular foreign disaster incident—whether made by the United States, other national governments, the United Nations, or voluntary agencies—involves complex social, economic, and technical problems. Ideally, any disaster response should be guided by clearly stated objectives and by accurate information about the disaster situation. In reality, however, responding to disaster provides a classic example of decision making under conditions of uncertainty—where the values underlying the response are often unclear and the information needed for rational judgments is, at best, imprecise and, at worst, nonexistent.

The problems created by foreign disasters and responses to them can only be approximated by aggregate statistics. In the 11-year period beginning in 1965 and extending through 1975, the U.S. government provided assistance to disaster-struck nations in which the estimated number of disaster-caused deaths totaled more than 3,500,000 (see Table 1).[1] The number of people affected by disasters ("victims") during the same period was reported to be 450,000,000, or about twice the population of the United States. These figures, of course, do not reflect the additional forms of human suffering, of property damage, and of social disruption.[2]

International disaster assistance programs have traditionally concentrated on providing relief in the immediate postdisaster period. More recently, with

[1] It should be noted that the validity and reliability of disaster impact data, such as those reported in Table 1, are unknown. The figures on U.S. government assistance are assumed to be accurate but those under the headings "Voluntary Agencies," "Other Donor Nations and International Organizations," and "In-Country Self-Help" are, at best, crude estimates.

[2] Examples of recent disasters of major magnitudes include the following: the Guatemala earthquake of 1976 (estimates of 23,000 deaths and 1,000,000 people affected); the Sahel drought of 1972-1975 (estimates of 100,000 deaths and 23,000,000 people affected); the Nicaragua earthquake of 1972 (estimates of 11,000 dead and 300,000 people affected); the East-West Pakistan civil war of 1971-1972 (estimates of 200,000 deaths and 27,000,000 people affected); the East Pakistan (Bangladesh) cyclone and tidal wave of 1970 (estimates of 224,000 deaths and 600,000 people affected); the Nigerian-Biafran civil war of 1967-1969 (estimates of 1,000,000 deaths and 3,500,000 people affected).

TABLE 1 Foreign Disaster Statistics and Emergency Relief Costs - Fiscal Years 1965-1975[a]

Year	New Disasters	Number Killed	Number Affected	Value of Assistance in Millions of Dollars			
				U.S. Government	Voluntary Agencies	Other Donor Nations and International Organizations	In-Country Self-Help
1975	24	48,000	44,315,000	200.4	14.9	270.4	74.5
1974	20	101,000	14,887,000	140.3	17.3	152.3	58.8
1973	25	112,000	215,240,000	301.4	15.5	158.9	658.1
1972	30	115,000	37,023,000	314.9	12.0	582.2	81.0
1971	51	522,000	68,070,000	189.0	16.7	266.6	744.8
1970	51	73,000	11,743,000	48.7	12.2	59.5	96.6
1969	36	1,019,000	32,482,000	102.6	12.2	95.5	131.0
1968	55	4,000	5,456,000	32.6	7.9	16.5	607.1
1967	52	1,518,000	14,223,000	81.4	12.2	173.2	2,964.7
1966	48	7,000	4,140,000	25.4	1.6	9.6	*b*
1965	50	47,000	5,504,000	46.3	3.8	3.6	*b*
TOTAL	452	3,566,000	453,083,000	1,483.0	126.3	1,788.3	5,416.6

[a]Information for this table was provided by the AID/OFDA and is based on compilations from its historical files.
[b]Data not available.

the recognition of the repetitive patterns of natural disaster occurrence, increasing attention is being given to predisaster measures of prevention, mitigation, and warning and to disaster-preparedness planning. The rationale for these predisaster preventive, protective, and preparedness measures is straightforward. Disaster relief officials assume that the degree of disruption to a society caused by a disaster will largely be determined by the extent to which the society has developed realistic expectations about the problems to be confronted. If the continuity of social life is to be maintained with minimal disruption, a society should be organized to anticipate the probable kinds of disaster it faces and take adequate preparatory measures prior to their occurrence.

Although there is increasing attention to the full spectrum of time phases in disaster, action relating to the emergency and short-term rehabilitation phases clearly predominates. There are many reasons for this. The level of knowledge about natural disasters has been minimal until quite recently. The immediate demands presented by the disaster impact are often quite severe. Basic human needs and human suffering are involved, the needs and suffering are well publicized, and there are a variety of motivations and pressures to respond to them. While the constraints on the development of predisaster preventive, protective, and preparedness measures are great and the justification for them often unclear, no such problems confront response during the emergency period. Agent-generated demands present an image of stark specificity. The dead and injured must be cared for. Entrapped persons must be rescued and taken to places of safety and assistance. The basic human needs of survivors must be met. Essential community services must be restored, and community order must be maintained. Although these problems have a kind of common sense clarity to them, this report will emphasize that their nature and magnitude vary greatly from one disaster to another. Thus disaster-caused needs can never be automatically assumed.

The avenues of disaster response also extend far beyond the immediate emergency and short-term rehabilitation phases. Recovery is a general term used to refer to longer-term responses to disaster, including attempts to mitigate any long-term direct or indirect effects of the disaster and to restore normal conditions to the community. Although statistical data on the long-range effects of disasters are quite scarce, these effects appear to be of growing concern to the international community. Especially in the developing countries, the losses from natural disasters may substantially offset real economic growth.[3]

[3] For example, the office of the United Nations Economic Commission for Latin America (ECLA) in Mexico has estimated that in the five countries in the Central American Common Market, disaster damage has averaged 2.3 percent of the gross domestic product in the 1960-1974 period. This figure does not take into account the indirect effects, such as the higher incidence of certain diseases, nor many small events, such as limited floods, which, taken in the aggregate, reach major proportions.

The distinctions among various time phases of disaster are admittedly arbitrary, but each of them captures different sets of disaster-caused demands, each implies different types of activity, and each suggests alternative roles for international disaster assistance. Although certain of these demands presently receive greater attention than others from the international community, there is no simple logic or empirical evidence that dictates clear, unequivocal priorities for international disaster response. Thus the appropriate roles for different groups and organizations and the priorities for international disaster assistance should be openly analyzed and debated.

Although Table 1 provides only aggregate figures, the number of public and private organizations that contribute to international disaster assistance is in the hundreds. Thus the United States is only one participant among many although the dollar value of its assistance is quite large. It should be noted that historically the *largest number* of U.S. government disaster relief operations have been in response to disaster agents that have rapid onset (e.g., earthquakes, tropical cyclones, hurricanes, and river floods), but the *largest amount of money spent* by the U.S. government has been for conflict disasters (e.g., civil strife or civil wars) and for the so-called creeping disasters (e.g., droughts and famines). In the past 15-20 years the volume of international disaster assistance and the number of participants have greatly expanded. Some of this expansion has undoubtedly resulted from the large amount of publicity directed to a few major disasters in the past several years in which the widespread suffering of victims has been dramatized. However, as we shall indicate in several ways in this report, the increased international attention devoted to disasters cannot be explained solely by the identification of victim needs in a few major disasters. The U.S. presence has grown, but so has that of other governments, voluntary agencies, the United Nations, and other international and regional organizations. Thus there has been an increase in the number of participants looking for meaningful roles to play. It is obvious that disasters create genuine human needs. Response to these needs creates further demands for personnel, equipment, transportation, and communications facilities, and for organizational and coordinative mechanisms to mobilize disaster-relevant resources. What is not obvious is the degree to which present international disaster assistance programs comprise an effective response to disaster-generated needs.

A key set of problems centers on the delivery of external goods to the impacted country during the emergency period. Drawing on both the case materials referenced in the bibliography of this report and the considerable experience of the Committee members and staff, the following are illustrative difficulties that occur repeatedly: (1) goods irrelevant to disaster-induced needs arrive in large amounts; (2) relevant goods arrive but in insufficient quantities; (3) relevant goods arrive but their quantities are far in excess of actual needs; (4) goods that are unlabeled and unsorted arrive, and they are

therefore difficult to distribute and use; (5) goods arrive concurrently from several nations, creating congestion at transportation facilities; (6) the inadequacy of internal transportation and distribution systems delay the delivery of needed external goods; and (7) there is no systematic evaluation of the logistics of delivery or use of goods and services provided.

These problems derive, in part, from the lack of adequate damage and needs assessment data during the emergency period, combined with perceived pressures to act quickly. They are also the result of the diverse number of public and private groups and organizations participating in assistance activities. In any major disaster, this diverse involvement virtually guarantees problems of coordination among international donors and between the donors and the disaster-stricken society. To talk of an international disaster response *system* is inappropriate, because that concept implies relatively high levels of mutual awareness, interdependence, and coordinated activity that presently do not exist. Nor can one assume that both offers of and requests for external assistance are guided purely by humanitarian motives. The Committee cannot document the extent to which the seeking or offering of assistance is politically motivated or competitive. However, we believe that the present pattern of international disaster assistance has elements of both competition and cooperation and that both selfless and selfish motives operate. These opposing tendencies are difficult to unravel and frustrating to deal with.

As noted at the beginning of this chapter, both technical problems and value issues are involved in making decisions to respond to a foreign disaster. Improvements in this decision-making process will require the more effective utilization of scientific and technical knowledge by the agencies that actually carry out international disaster assistance operations. There is an obvious need to identify more clearly those problems toward which scientific and technical information can be fruitfully applied. However, improvements in decision making will also require a clarification of the value issues involved. Value premises obviously affect the decisions on what, where, when, and how foreign assistance will be rendered, and these decisions, in turn, establish the framework for determining feasible applications of scientific and technical information. The following types of value and policy questions thus need clarification: Which of the many disasters that frequently occur throughout the world merit outside interest, attention, and involvement? What criteria should be used to guide a decision to render external assistance? Should the decision be based on the magnitude of the impact? On the request of the nation affected? On what the country can do for itself? On what other donors might do? Who should coordinate the assistance activities that come from donor countries? Should the United States, other donor nations, and the United Nations pay greater attention to predisaster problems of prevention and preparedness and also to postdisaster problems of reconstruction and development? Both these value questions and the problems of applying sci-

entific and technical knowledge to the decision-making process will be addressed in subsequent chapters of this report.

We conclude this introduction by making several basic value premises explicit. The Committee believes that the policy framework, strategies, and ethics of international disaster assistance should be guided by the basic principles of humanitarianism, evidenced by a concern for and response to the human needs of disaster victims. The Committee also believes that the fundamental purpose of international disaster assistance should be to respond to the locally unmet needs of disaster victims. Thus the nature and quantity of international disaster assistance should be conditioned not only by the intensity of impacts and the vulnerability of human settlements, but also by the capability of the affected community to meet its own disaster-generated needs. Outside disaster assistance should complement, not duplicate, the existing resources and response activities of the recipient country. Donors should help but not overwhelm, assist but not create a dependency relationship, provide for genuinely needed goods and services but not disrupt the natural adjustment mechanisms in the disaster-stricken population. Finally, we believe that the external contributions to the stricken nation should be the result of coordinated rather than disjointed effort.