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Working Paper 88-23
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ORGANIZATIONAL ACTION IN DISASTER ENVIRONMENTS
The Problem: Designing Effective Organizational Response in Disasters

Organizational action in disaster environments is critical. The primary unit of emotional support in disaster is a difficult one, as families affected by disaster are likely to be the family, yet families, without economic assistance, given without rebuilding their lives. Yet, economic assistance, given without major loss in disaster need economic assistance in order to the dilemma is a difficult one, as families affected by disaster may slide into dependency.

Another in a destructive spiral, and families, with little help is limited, the emotional and economic loss compound one. The emotional and economic demands of rebuilding their lives is rendered more tenuous, their capacity to cope with the stress and often costly demands of rebuilding their lives existence is threatened by severe economic loss or when an already marginal family's have simultaneously been threatened with no means of safety. When these families have simultaneously been threatened with no means of safety, seeking to re-establish a and belonging to a tightly around them, seeking to re-establish a sense of security, they tend to gather remaining family members, friends and neighbors who suffer the sudden loss of loved ones.

Researchers have noted repeatedly by economic losses following disaster has been noted repeatedly by disaster. The traumatic interaction between emotional and adverse changes in economic and human conditions incurred in families as social units are the most vulnerable to sudden, for the individual involved is likely to be the family, yet, when disaster strikes, the primary unit of emotional support

Disaster

In

Crisis as Opportunity: Designing Organizational Response in Disaster

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differing results among the groups they seek to assist. Further, differing results among the groups they seek to assist. The irony is that disaster assistance, without careful design, may lead to dependency; efforts at assisting families to do so. The irony is that disaster assistance, without careful design, may lead to dependency; differing strategies in their recovery operations, using differing techniques, differ in their capacity to empower and engage families in response to disaster. Providing emotional and economic support to victims of disaster draws the interest, empathy and engagement of multiple organizations -- public, private and charitable. Differing types of organizational development differing techniques, differing types and differing effectiveness in the capacity of families to respond to adversity. This capacity depends, in part, upon the mix of types of organizations involved in the process. Disaster assistance is above all, labor-intensive work at the local level. A sobering fact is that organizations engaged in response and recovery operations, using differing strategies, tend to produce staggering variability in their efforts at assisting affected families. The sobering fact is that organizational engagement, effort and recovery operations, using differing strategies, tend to produce staggering variability in their efforts at assisting affected families. The sobering fact is that organizational engagement, effort and recovery operations, using differing strategies, tend to produce staggering variability in their efforts at assisting affected families. The sobering fact is that organizational engagement, effort and recovery operations, using differing strategies, tend to produce staggering variability in their efforts at assisting affected families.
when these organizations operate without systematic cooperation and coordination to the

charity regarding the respect -

are best stated explicitly in order to build a common understand -

the assumptions underlying the relationship between or -

both response organizations and affected families. Most important of the assumptions for, and constraining, on social action by

achieve this goal, however, requires a re-examination

ment, both for affected families and for the community as a

recovery and development, disaster assistance results in constructive recovery and development so that the problem of response in an uncertain environment is how to structure

7. Disaster.
Five assumptions, drawn from literature on organizational theory and professional observation of disaster operations, are central to structuring the problem of disaster assistance in ways that make sense to those who seek meaning for their lives. In this view is the assumption that disaster can be viewed as opportunity rather than catastrophe events.

1. The cost of disaster—in lives and property—is significantly higher in developing countries than in industrialized countries. Three factors contribute to this condition. Developing countries' demographic structures affect the vulnerability of populations to disaster, which in turn affects the level of casualties in disaster. Developing countries have higher levels of poverty than in industrialized countries, which in turn affects the level of vulnerability to disaster. Developing countries have lower levels of infrastructure, which in turn affects the level of response to disaster.

2. Disaster can be viewed as opportunity rather than destruction. Implicit in this view is the assumption that people seek meaning for their lives, and they will try to interpret the events of disaster in a way that makes sense to them. This view is consistent with the theory and professional observation of disaster operations, where the problem of disaster assistance is structured to facilitate constructive action.
Consequently, event the destructive consequences of disaster can be transformed into opportunities to reexamine present actions in the existing environment. Also implied in this concept is the assumption that most people seek to manage their own lives. They may need new skills, guidance, direction, but fundamentally most people are open to learning and are capable of doing so. The paradox is that disaster may shatter existing conceptions of traditional constraints against individual action and allow the formulation of new processes for individual and community development. The task is to specify the learning processes in ways that people can understand and achieve, with progressive development of skills.

Third, information is a fundamental resource in disaster response and recovery operations. Structuring a system of acquiring, processing and transmitting information among the relevant participants in order to facilitate informed, coordinated action toward the common goal is a principal task of disaster management. To design a process of feedback on performance to allow no single individual to make appropriate decisions all of the interdependent processes. To no single agency can manage it alone. Fourth, disaster response and recovery is fundamentally an interconnected process. In disaster response and recovery, with progress toward the common goal is a principal task of disaster management. In order to facilitate informed, coordinated action among the relevant participants in order to facilitate informed, coordinated action toward the common goal, core activities in the recovery process are information acquisition, processing, and transmission. Structuring a system of response and recovery operations. This implies that information is a fundamental resource in disaster response and recovery operations. The task is to specify the learning processes in ways that people can understand and achieve, with progress toward the common goal is a principal task of disaster management.
to the efficiency and effectiveness of actions taken in the response and recovery operations. These steps need to be incorporated into the pattern of interaction toward the desired goal are necessary steps in this process. Refinement and redefinition of performance, allowing the acknowledgment of errors and actions, assesses opportunities for review, feedback between goals and actions, identifies discrepancies in organizational learning. Finding means to identify dynamic environments is central to organizational interaction in complex environments. Disaster management, recognizing conflict as a normal aspect of organizational environment, dynamic environments and interactions is an inevitable part of organization. Finally, adjustment of conflicts among the participating organizations, central to effective action in the uncertain environment of disaster, fosters trust among the participants, central to effective action in the uncertain environment, attributes of the primary decision-makers trust among disaster operators, when there is no time for extended discussion of alternatives or search for more information. The dynamic process of interaction is critical in establishing the credibility of the primary decision-makers in the complex, jurisdictional, disciplinary and cultural environment. Feedback, communication drives organizational action, and style response and recovery processes.
Summary, these six premises define a basic orientation toward organizational action in response and recovery operations following disaster in developing countries. This orientation is directed toward creating a set of processes by which affected families and local communities can help one another and themselves at the local level. Technical assistance, resources and constructive feedback on performance, drawing from external sources, foster learning processes. The trauma of disaster is transformed into an opportunity for development and reinforce the learning process. The six premises are as follows:

2. Characteristics of disaster assistance: An assessment of primary orientation toward organizational action in response and recovery operations in developing countries.
3. Normal conditions existing in developing countries -- and the accepted standard of recovery after disaster -- are different strategies of how to achieve it. A primary difference between the accepted visions of constructive recovery and the community as a whole, what is at issue, is the trauma of disaster literally transformed into an opportunity for development.

In any disaster, virtually all participants in response and recovery operations accept the universal goal of protecting life and property, and of constructive recovery for the affected community. What is at issue, however, are different visions of constructive recovery and the community. Accepting this orientation, communities become strengthened over time by new patterns of productive performance -- individual and organizational -- which were adopted initially as a means of coping with the urgent need of disaster. These six premises define a basic orientation toward organizational action in response and recovery operations following disaster in developing countries.
Dealing with disaster recovery in developing countries can be a complex process. The destruction that occurs during a disaster can be turned into an opportunity for reconstructive redesign of structures and living conditions in the affected communities. However, accepting the disaster as an opportunity for reconstruction in safer and stronger modes of health and housing presents both costs and benefits. There is, first, a learning cost. The affected families themselves are in immediate need, and they are forced to learn new skills in the reconstruction of their homes or new homes. They need to adopt new, safer and stronger methods of cooking and sanitation. They may need to learn new skills in the reconstruction of their homes or new homes during the period of reconstruction. The first to experience the dislocation of physical dislocation or structural families themselves are in immediate need, and they are often subsistence in terms of human health and safety. The costs and benefits. There is, first, a learning cost. The structures and living conditions in the affected communities can be turned into an opportunity for reconstructive redesign of structures and living conditions in terms of human health and safety.
The benefit to this approach, however, are substantial. If the orientation is directed toward the future, then the recovery and reconstruction projects have the primary effect of mobilizing action toward a positive, productive, and tangible goal for both families and communities. The tragedy of the disaster becomes memorialized in the reconstruction for a better future. Families and communities, the tragedies of the disaster becomes the focus of the future. The orientation is directed toward the future, the recovery and reconstruction projects have the primary effect of mobilizing action toward a positive, productive, and tangible goal for both families and communities.
collectivememoryenrichestheperceptionofcommunityesteemandtheireJailitytoworkeffectivelywithexternalorganizations,importanttothecontinuingtasksoflearningandproductionindevelopingcountries.

Ifthegoalofdisasterassistanceisnearlyuniversallyaccepted,thedesignoftypesandmodesofdeliveryofsuchassistancedrawswidelyvaryingviewsandpractices.Fourquestionsarecentraltothedesignofresponseandrecoveryoperations:

1. Whoneedsassistance?
2. Whatkindsofassistancedotheyneed?
3. Whatresourcesareavailabletoprovideassistance?
4. Howcanavailableassistancebethematchedtoidentifiedneeds?

Theaccuracy,timelinessandcomprehensivenessofinformationgathereedinresponsetothefirstthreequestionslargelydeterminethescopetheofresponseandrecoveryoperations.Theresultsofthereosexposedtothefirstthreequestionslargeqestionslargelydeterminethescopeoftheresponseandrecoveryoperations.

Informationisalsoafactorlikelytobedifficulttoobtainquicklyandfullyindevelopingnations,asthesocialinfrastructureofeducationandcommunicationstechnologytosupportthesearchmaynotbereadilyavailable,especiallyin ruralcommunities.Consequently,thereisanimportantneedtodosupportthesearchbydevelopinginformationtransferandorganizationaltechnologiesforthequickandfullutilizationofinformationindevelopingnations,andthesizeofcommunityesteemandcollectionmemoryenhancesperceptionofcommunityesteemandeffectivenessinworkingwithexternalorganizations.
5) Prompt feedback on performance in the process
4) Open and two-way communication among all participants in the process
3) Clear standards for determination of need and allocation of assistance
2) Knowledge of, and respect for, local traditions and organizations to the affected families
1) Clear communication of the goal of disaster assistance

Dimensions are:

Many additional characteristics enter into the design of response and recovery operations, either by choice or default. While it is not possible to discuss all of them in this brief essay, the primary characteristics are identified that, if not taken into account in the design of response and recovery operations, are likely to contribute to successful outcomes. Conversely, if these characteristics are taken into account in the design of response and recovery operations, they are likely to contribute to conflict within the community. Conversely, if these characteristics are not taken into account, they are likely to contribute to conflict among organizations participating in disaster operations. These additional characteristics can be represented in the following cycle, first presented by Chris Argyris:
It is not possible to characterize all of the programs in the set of disaster assistance programs as effective in meeting the needs of the affected communities. Many organizations were involved in disaster response and recovery operations following the Ecuadorian earthquakes. Each of these organizations, in turn, participates in the set of disaster assistance programs within which their efforts have been allocated. Some organizations are more effective than others in providing assistance, but not all are likely to occur by chance.

What is interesting is the balance that is created, both on each separate dimension and among the set of variables. Disaster assistance programs are likely to include a variety of different disaster assistance programs, rather than a mutually exclusive set of categories. Further, any disaster assistance program that is effective must include a balance of variables that are effective in meeting the needs of affected communities.
two programs, both involving multiple levels of aggregation in the mobilization of resources and both judged successful by differing standards, will be used to illustrate the dilemma and the complexity of the problem. The purpose of this inquiry is not to judge efforts already taken, but to raise questions regarding the most effective means of organizational aggregation in the mobilization of resources and both judged satisfactory in the mobilization of resources and both involving multiple levels of aggregate and the complexity of the problem. The purpose of this success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to 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illustrate the success by deterring standards will be used to illustrate the success by deterring standards will be used to illustrate the success by dettering
On March 6, 1987, after checking the safety of U.S. Mission employees, their families and U.S. citizens in Quito, U.S. Embassy staff turned their attention to the other areas of the country that may have been affected by the earthquake. Little news had come into the capital city from the other areas of the country.

On Saturday, March 7, 1987, the U.S. Ambassador and members of his staff took a reconnaissance flight by helicopter over the zone of the epicenter of the earthquake, near the Reventador volcano. They observed the destruction caused by the earthquakes, including landslides to the rivers, oil pipelines, roads, and bridges. Further, they needed more information regarding these vital joint national economic and social interests.

On Saturday evening, March 7:00 p.m., C.23 cable was sent from Washington, D.C. to the U.S. Office of Disaster Assistance in Washington, D.C. The cable asked for additional assistance to the U.S. citizens and their interests in the country. The Ambassador and his staff recognized the need for more information regarding these interests. The embassy supported temporary relocation of the American citizens and their families to the capital city before they could return to their homes.

On March 6, 1987, the embassy staff checked the safety of U.S. Mission employees, their families, and U.S. citizens in Quito, after the earthquake.
The U.S. Office of Foreign Disaster Assistance brought not be solved on a technical basis alone.

human hurt, desperate and hungry were difficult tasks that could
where all families were needy, coping with the painful issues of
establishing criteria for distribution of assistance in an area,

U.S. Mission personnel had performed the first task in disaster
government-to-government extension of disaster assistance, U.S.

that need, effectiveness and prority. Experienced professionals
identified families who were victims of the disaster,
supplies to remote rural areas involved a major task of logistics
and with what degree of verification of receipt? The delivery of

The second task in this government-to-government program,

guidelines of their diplomatic mission. The professionals within the
disaster within the conditions of the disaster that needed, effectiveness and priority. Experienced professionals

U.S. government to deal with the crisis.

committee of Emergency Operations (COEN), established by the
U.S. government transferred the supplies directly to the National
Several experienced consultants to Ecuador on a temporary basis were asked to assist in the rural areas where they were working. Yet, those consultants were not matched by the Peace Corps volunteers sent to assist with the distribution of relief supplies, specifically medical supplies. At that point, coordination, communication, and capacity of the organizations did not match the practical requirements of the already burdened organizations. The actual resources of the U.S. or any other country, threatened to overload the capacity of the Ecuadorian Civil Defense organization. The management capabilities of a newly formed disaster operation in the disaster zones simultaneously stretched the management capabilities of a developing organization with limited staff, transportation, and equipment. Local demands were pressing, and local committees of Civil Defense had little experience or training for disaster operations. The requirements for conducting disaster operations were a large, complex task under very difficult conditions. Assistance to people in the affected zones, yet the distribution of disaster assistance for the organization and distribution of relief supplies were dysfunctions patterns. Further, virtually all families in the disaster zones were affected. The distribution process encountered many difficulties.
needy, whether or not they had suffered direct impact from the disaster. Consequently, the distribution of basics such as food and blankets were desired and needed as much by families who were not directly affected by the earthquakes as families who were. It was extremely difficult to distinguish between "disaster victims" and ordinary levels of poverty in the communities. Distribution of supplies was viewed initially as a short-term process. The goal was simply to get supplies to the disaster victims as quickly as possible, until normal conditions could be restored. However, with roads and bridges destroyed and many people out of work as a consequence of the disaster, "normal conditions" or market operations could not easily be resumed. Without design, the distribution activities were subject to distortion, disruption and manipulation for particular interests. For example, with no means of verification of need or receipt of supplies, some local residents returned repeatedly to distribution centers for scarce supplies, putting their particular interests above those of others in greater need or the community as a whole. Excess above those of others triggered their particular interests.

A third problem was the time perspective set for the project. Distribution of supplies was viewed initially as a project, but the time perspective set for the project was clearly long-term and required careful design. Without design, the distribution activities were subject to distortion, disruption and manipulation for particular interests. Food, water, and other basic necessities were perceived as fundamentally unjust by families who were hungry or cold or without food. Damage was perceived as fundamentally unjust by families who were also hungry or cold or without food. Distribution of supplies was intended only for those whose homes had suffered damage, whether or not they had suffered direct impact from the disaster. Consequently, the distribution of basic supplies such as food and blankets were desired and needed as much by families who were not directly affected by the earthquakes as families who were.
immediate protection from the rain, while others shelter for families was being arranged. Yet, in late June, 1987, four months after the earthquakes, people were still living in plastic shelters. In the Andean highlands, families contracted pneumonia or other ailments from living in such vulnerable conditions, and at least ten children died from exposure and lack of medical care. 29

The complexity of the disaster operations, conducted in three geographic zones, each with differing levels of economic need and vastly varying ranges of community support, made the task of distributing disaster assistance very difficult indeed. The conditions were very interesting from the standpoint of gaining insight into the interaction between governments in the design of effective disaster assistance programs. Yet, after the period of active involvement by the U.S. Mission in disaster assistance was over, no systematic evaluation was done regarding the continuing effects of activities undertaken as disaster assistance in the damaged communities. Feedback to U.S. decision-makers involved in the disaster assistance process reflected only the immediate needs of the affected communities, and the appropriateness of plastic as temporary shelter in variable mountain climates deserves careful study before its use is repeated in future disasters. 29
government-to-government program operated virtually without flaw. In terms of its impact on the people and communities in the disaster-affected areas, questions remain. The second project was operated jointly by two private, voluntary organizations, Cororacion de Apoyo clerical y a Comunicacion (CATEC) and Catholic Relief Services (CRS). In very brief outline, the project, although addressing disaster-affected areas, questions remain.
what needs were being met, what supplies were most in need.

The procedure that allowed the project to keep records of
who each family's share at the expense of others in the com-
mand team was involved in targeted individual efforts to obtain more
directly on need, and the norms of community cooperation were
based. Distribution was noted in Quito. Details of distributed supplies were kept and submitted to the
program director's office. Each family that received
disaster assistance signed a receipt for that amount, and weekly
special needs were established. Each family that received
the event, and the extent of their family obligations and any
through a census of each community conducted immediately after
who had suffered direct impact from the disaster were identified
procedures for supplies distributed and received. All families
Third, the project established a clear set of recordkeeping

norms of cooperation in community service.

concern for the needs of other community members and reinforced the
meant the design. People donated their time to community service
work in the shura, but they were supported with food and basic
necessary work. From CRS/CATEC’s work group, the shura, as the means to improve
cooperatives to a major unexpected change in
ordinary people in adjusting to a major unexpected change in
recognizing the lingering effects of trauma and the difficulty of
offered assistance for a period of four months. First, it was designed
services, had several important aspects. First, it was designed

had several important aspects. First, it was designed

had several important aspects. First, it was designed

had several important aspects. First, it was designed
It also encouraged responsibility and openness on the part of the recipients.

Finally, and perhaps most importantly, the project established as its coordinator a man who worked in the field at least three days a week for four months. The coordinator was carefully selected for his previous experience in fieldwork in rural communities. He offered the residents of these communities needed materials, technical assistance and most of all, hope and encouragement in the gritty task of rebuilding homes, farms and rural communities. He offered the residents of these communities a clear focus for community action and rebuilding efforts to take responsibility for rebuilding their homes and community. The coordinator's style of communication was informal, fair but firm. In demonstrating an alternative approach to the destruction in their community, he was able to win the trust of the residents and to encourage them to create an alternative vision of the disaster, one that accorded time, guidance and direct interaction with community residents to the point of strengths, live man of the CRS/CAREC project from that of the U.S. mission in man of the CARE/CRC program offered a clear focus for community action and rebuilding among residents of these communities with marginal economic bases.

Several important characteristics distinguished the performance of the CRS/CAREC project from that of the U.S. Mission in Ecuador disaster operations. In terms of strengths, five factors emerged as significant differences between the two programs. First, operating as private, voluntary organizations, the two programs differed in significant interactions in rural communities. He offered the residents of these communities a clear focus for community action and rebuilding efforts to take responsibility for rebuilding their homes and community. The coordinator's style of communication was informal, fair but firm. In demonstrating an alternative approach to the destruction in their community, he was able to win the trust of the residents and to encourage them to create an alternative vision of the disaster, one that accorded time, guidance and direct interaction with community residents to the point of strengths, live man of the CRS/CAREC project from that of the U.S. mission in man of the CARE/CRC program offered a clear focus for community action and rebuilding among residents of these communities with marginal economic bases.
CRS/CATEC could make decisions without the glare of publicity and social base into the recovery program. The destruction wrought communities to manage their affairs on a stronger economic and explicitly the goal of developing the capacity of committees and reconstruction was a long-term objective. It incorporated third, the project, at the outset, recognized that recovery to committees and communities affected by disaster. reinforce the common goal of the project, humanitarian assistance multigenerational national phases from any single viewpoint and to perspectives represented in the design of the project served to disaster operations. The varied experiences and mitigate the national programs and in several international participation, direct and indirect, in several international development field work and years of experience in international development. The coordinator of the project was a Costa Rican, all four brought an international orientation and an international perspective. The coordinator of the project was Chilean, the program director of CRS in Quito was Ecuadorian, and an influential participant in the project was Costa Rican. Second, the leadership of the project was international, both providing monetary and technical support to the project. national and international organizations that were involved in over the chain of communication and action linking community, the partners in the community and in sustaining that trust of goals. This is a critical factor in winning the initial trust of action, no matter how carefully designed to serve humanitarian attraction of particular interests that attended any governmental action and CRS/CATEC could make decisions without the glare of publicity and
The project was designed to serve as a step in that direction. Recognition and acknowledgment of the community's emotional needs were addressed, and steps were taken to focus on the practical tasks of reconstruction rather than the pain of loss or future uncertainty caused by continued seismic risk. By sharing in the decision-making process, participants made commitments, and materials needed for implementing them were specified and obtained. Agreements were reached regarding who would take what action. Slowly, anxiety in the community was turned to energy as people began to focus on the practical tasks that would take what action. In meetings with community partners, clear steps for community action were outlined by the project coordinator. Participants, who had been engaged in weekly meetings with community partners, made commitments which, stated publicly, were reinforced by shared decision-making. The project was designed to serve as a step in that direction.

Fourth, the project acknowledged the emotional needs of the community residents. Despair over present loss, not forward, not back; it marveled hope for future growth, not community action. Yet, the orientation of the project was toward participants as they sought to engage in constructive action for community residents. Despair over the destruction caused by the disaster, uncertainty over the future, anxiety over the burdens of reconstruction, were recognized as part of the burden of disaster. The project was designed to serve as a step in that direction.
this awareness can be turned into an opportunity for international action. The danger remains, and the question becomes whether the Boucaud and other nations along the western coasts of the Pacific that runs through quake faults known as the Ring of Fire, the Pacific system of Earth—

Disaster-prone Nations

recommendations for action: Turning crises into opportunities in developing countries

Recommendations for Public Policy: Strategy for Action in Seismic Zones

Seismic activity will continue along the system of earthquake faults known as the Ring of Fire that runs through Ecuador and other nations along the western coasts of the Americas. The danger remains, and the question becomes whether Boucaud and other nations along the western coasts of the Pacific that runs through quake faults known as the Ring of Fire, the Pacific system of Earth—
al the cooperation among nations in the region to mitigate the risk of disaster assistance is a critical step toward developing a cooperative structure among nations involved in international organizations. The careful design of policy and programs to mitigate disaster offers a means of coping with seismic risk for nations along the Ring of Fire, and systematic assessment of systematic feedback through all links organizations effectively carried out by international operations teams or organizations. The costs of disaster are borne internationally, and the responsibility for mitigation assistance when disasters do occur may be most appropriately committed to the Red Cross. The norms of humanitarian assistance are perhaps best implemented by organizations such as the International Committee of the Red Cross, and the international mission objectives of government-to-government programs of disaster assistance. The costs of disaster are borne internationally, and the responsibility for organizing assistance when disasters do occur may be most effectively carried out by international operations teams or organizations. The careful design of policy and programs to mitigate disaster offers a means of coping with seismic risk for nations along the Ring of Fire, and systematic assessment of systematic feedback through all links organizations.

First, utilization of systematic feedback through all links organizations.

Second, shifting the responsibility for disaster assistance to international rather than national organizations.

Third, utilization of systematic feedback through all links organizations.

Fourth, shifting the responsibility for disaster assistance to international rather than national organizations.
the InterAmerican Region.

networks of organizations to mitigate future disasters in

dynamic processes. Such an information base may be used to design
vehicle to facilitate organizational learning in this complex'
regarding the management of seismic risk becomes a powerful
live experience and knowledge of practitioners and researchers
Finally, a shared information base representing the cumulative
redesign or discovery of newer, more effective actions.

discovery, invention, production and evaluation of actions and

Systematic feedback closes the loop on the learning cycle of

learning system of organizations engaged in this mission.
NOTES


9. Frederick C. Cuny, Disasters and Development (London: Oxford University Press, 1983): 15. Comparison of costs of disaster in developing vs. developed countries vary. Some analysts estimate that the cost of disaster in lives and property are on average, developing vs. developed countries varies. Some analysts estimate costs of disaster in lives and property are on average, developing vs. developed countries are.

10. This concept is reflected in the title of this paper. The concept derives from the ancient Chinese view of crisis, which is written by combining the character for "danger" with the character for "opportunity," a reminder of the seemingly small but important opportunity that can arise from danger. This concept is reflected in the title of this paper. The concept is reflected in the title of this paper. The concept is reflected in the title of this paper.


13. This premise views disaster response and recovery operations as emergent networks of social action. See Thomas E. Drabek et al., Managing Multiorganizational Emergency Responses (Boulder, Co.: University of Colorado, 1981).

14. Rudi Klaus and Bernard M. Bass found five characteristics that contribute to the development of trust between the “focal person” or one who sends the message and the recipients of the message in the communication process. These characteristics are:

   1. Careful listener;
   2. Open and two-way process;
   3. Careful transmitter;
   4. Respectful listener; and
   5. Informal.


17. One of the sobering outcomes of the March 5, 1987 earthquakes was the documentation of poor health, housing and sanitation conditions in the rural communities affected by the disaster. See reports in HOY, Quito, Ecuador, March 9-12, 1987.


20. These characteristics draw upon both prior research and professional observation. See, for example, Klaus and Bass, op. cit., and L.K. Comfort, "Action Research: A Model for Organizational Learning," op. cit.


27. Interview, volunteer worker in disaster assistance center in Baeza, June 27, 1987.


29. Official U.S. reports of the distribution of plastic showed the operation to be a success. Indeed, in terms of logistics and accountability, documents show that the process worked well.

30. Interview, program director of Catholic Relief Services, Quito, Ecuador, July 12, 1987.


32. Names are not given to protect the confidentiality of individuals in these positions.