Working Group #2: Social, Economic, and Political Constraints

Working Group Assumptions

The social, economic, and political constraints working group identified potential constraints to hazard reduction, assessed the importance of those limits, and suggested means for lessening the constraints. The group recognized that constraints are relative notions, and that constraints can be opportunities in some cases.

In discussing social, economic, and political constraints to hazard reduction, the working group assumed they were working within a time frame of one decade, that no substantial increase in federal funding would occur in that time, and that their deliberations should take a national perspective. They examined two dimensions regarding constraints:

- Factors that constrain hazard mitigation generally; and
- Factors that constrain development of a U.S. Decade.

Hazard Reduction Constraints

In looking at the numerous constraints to hazard reduction, it is perhaps significant that hazard reduction has occurred. However, the working group's review of various constraints showed that few of them, if any, are absolute barriers. They can be overcome, although doing so may be difficult within the time frame and resources available for the U.S. Decade for Natural Disaster Reduction. Table 1 indicates the range of potential constraints that were identified, the potential limiting factors of the constraints to hazard reduction efforts, and the prospects for overcoming the constraints.

The working group discussed each of these categories and identified key issues that relate to hazard reduction. These are summarized in the following sections.

Cross-cutting Constraints. Cross-cutting constraints reflect the limitations imposed by the way governmental and nongovernmental roles are defined in relation to hazard reduction. These constraints broadly limit and define possible approaches to a U.S. Decade. Regardless of the definition of these constraints, it is important to recognize that hazards are a national problem. The key issues raised by these constraints are whether or not there are new and better ways to conceptualize hazard reduction and to conceptualize the roles to be played by the various groups involved.

Governmental Constraints. These constraints reflect the limits of federal, regional, state, and local governmental entities. The key issue arising from these constraints is the extent to which national and, particularly, subnational capabilities to initiate and implement hazard reduction efforts can be increased over the next decade.

Nongovernmental Constraints. These constraints reflect the limits to private entities, academic institutions, professional associations, nongovernmental organizations and interest groups in initiating or carrying out hazard reduction efforts. The key issues here concern the ability to mobilize and coordinate nongovernmental attention to hazards.

Legal, Economic, and Behavioral Constraints. These constraints reflect various factors affecting individual and organizational decisions about hazard reduction. These are the most difficult constraints to address because of the subtleties and difficulties of understanding and altering human behavior. Design of appropriate and effective incentives to undertake hazard mitigation is clearly an important aspect

The working group noted that their list does not contain several factors sometimes identified as barriers to hazard reduction. In some respects, each of these factors reflects assumptions that have developed about hazard reduction. Each of the following are, in some ways, constraints, but not nearly to the extent commonly believed.

Knowledge. The working group agreed with the basic premise of the National Academy of Sciences that a sufficient amount of technical knowledge exists to launch effective Decade reduction programs. More research may be necessary for closing gaps in knowledge, but the basic constraint is that of

knowledge/applications transfer, not lack of knowledge itself. This can be remedied through applied research, demonstration projects, and evaluations of the use of scientific information, risk communication, implementation, and so on.

Awareness. As the hazard reduction community has learned, public awareness of risk is an especially complex area to address. The working group identified a key future effort as increasing individual hazard reduction awareness – demonstrating the range of options and emphasizing alternative responses.

Funding. Insufficient funds are often identified as the major impediment to effective hazard reduction. While any organization is subject to funding limits, the lack of funding for hazard reduction in part reflects the low priority of such efforts. It also reflects the inability of hazard researchers and practitioners to "sell" hazard reduction effectively to policy makers and the public. The working group reiterated that hazard reduction must be politically acceptable and economically feasible to both these groups.

The working group pointed out that some of the constraints listed in the table can be viewed positively. For example, multiple entities at subnational levels may complicate implementation, but they may also present multiple options for hazard reduction initiatives. Another example concerns the issue of governmental liability. Legislators often view liability as a reason for not undertaking hazard assessments, fearing they will document a risk. Yet, liability can also be viewed as a positive factor, since effective reduction efforts reduce potential governmental liability. The threat of being liable may be an impetus for action.

It is also important to recognize that many of these constraints have been addressed in some fashion by existing hazard reduction efforts that address floods, hurricanes, earthquakes, and other hazards. The Decade effort can build upon models established by the "Unified National Program for Floodplain Management" or the constituency building activities of the FEMA-led National Earthquake Hazards Reduction Program.

U.S. Decade Constraints

A second discussion among working group participants focused on the more immediate issue of constraints to the development and initiation of a U.S. Decade. The working group discussed immediate "design problems" that presumably can and will be resolved prior to, or early in the development of, a U.S. Decade for Natural Disaster Reduction. If these problems are not resolved, they will become continuing issues that will undermine the ultimate success of the effort. These constraints include:

- A lack of goals or focus;
- Limits to federal leadership;
- A weak mandate for federal agency involvement;
- A lack of "baseline" measures of current reduction efforts;
- Insufficient constituency support.

The Decade needs a short list of definable goals that will provide a focus for the effort. If appropriately framed, these goals will serve as a basis for gaining federal agency, subnational, and private support for the effort. In order to set priorities, measure progress, and generate support for a hazard reduction effort, the working group recommended that a clear assessment of the existing situation be initiated. While pieces of such an assessment exist, it is difficult to specify what a comprehensive effort should entail. The inability to make cross-hazard statements about relative risk, potential for risk reduction, and progress to date makes it difficult to set priorities for a U.S. Decade program. Thus, the working group recommended a baseline assessment as an important component of the U.S. effort, but cautioned that it should be a quick and timely synthesis rather than a major piece of primary research.

Although there appears to be agreement concerning the need for federal leadership for the Decade, there are real limits to such potential leadership. In part, this is because federal agencies have funding limitations and insufficient staff to devote to the effort, and lack top-level endorsement for the Decade.

This constraint may be lowered by the creation of a federal-level interagency coordinating process that emphasizes a multihazard approach to the Decade and hazard mitigation. A strong mandate within the executive branch would certainly help, and executive orders or directives, such as the one establishing hazard mitigation teams, would also increase the saliency of the Decade at the federal level.

Along with constraints to federal support, there may be limits to the support available from other constituencies as well. The working group recommended that a concerted effort be made to involve a range of professional associations, organizations, and private entities including industry, nongovernmental organizations, and other hazard reduction constituencies. The working group suggested a consortium for the Decade which might, as a first step, undertake a baseline assessment.

The working group also discussed practical factors that constrain the launching of the U.S. Decade for Natural Disaster Reduction. Those practical realities that must be confronted immediately include short lead time, insufficient staff, and a lack of priorities. The working group cautioned that there is little time to resolve the constraints to the Decade effort and develop a detailed plan for a U.S. Decade. Qualified staff are needed to develop a plan, build additional constituency support, and engage in other activities to launch the Decade.

Few, if any, of the factors discussed are absolute constraints to launching a U.S. Decade for Natural Hazard Reduction or to making progress toward hazard reduction in general. The constraints can be overcome, but doing so may require more time, effort, and agreement than it is possible to achieve within the 1990s.

The detailed recommendations from this discussion call for finding ways to address both the immediate problems and longer-range constraints. As immediate steps, the group suggests: providing focus, establishing federal leadership, undertaking a baseline hazards assessment, developing "constituency" support among relevant groups, and seeking a stronger mandate for federal agency participation. The detailed, longer-range suggestions are listed in the right-hand column of Table 1.

In addition, four guidelines for designing the U.S. Decade were suggested by the working group: 1) focus the effort at subnational/private levels; 2) build on existing organizations; 3) build upon existing hazard reduction programs; and 4) work around the constraints of insufficient knowledge, limited awareness, and limited funds.

Ultimately, there is a dual problem. One must obtain commitment for the Decade and, at the same time, build the capacity to carry out such an effort.

TABLE 1

HAZARD MITIGATION--SELECTED CONSTRAINTS

CONSTRAINT	HOW AFFECTS MITIGATION	PROSPECTS FOR CHANGE
Cross-Cutting		
Time: 10 years	Limits what can be accomplished	LOW: defined as a decade effort
Views about government role	Helps define appropriate governmental role – limits to federal intervention	UNCERTAIN: values and preferences change over decade(s)
Disciplinary/ Specialist Blinders – think in terms of specific hazards & disciplines	Myopic efforts, dissipates efforts	SOME: efforts to establish integrative program(s) are contemplated
Lack of constituency for hazard reduction	No focused constituency – multiple constituencies, limits commitment to integrated effort	SOME: build on existing constituencies, coordinate efforts
Bias toward technological "fixes"	-May create undesirable distributive impacts -May simply lead to postponement of large disasters because of false sense of security	SOME: increase attention to distributive effects
Governmental - Federal		
Federalism: Intergovernmental fragmentation	Intergovernmental implementation problems	LOW: need to accept and work through intergovernmental mechanisms
Intragovernmental fragmentation: -multiple agencies -multiple committees	Myopic focus, dissipates energies	SOME: look for coordinating mechanisms; define leadership role and authority
Mixed legacy of federal leadership in hazard mitigation	Limits mobilization potential	SOME: look for ways to enhance federal leadership for the Decade effort

HAZARD MITIGATION--SELECTED CONSTRAINTS (continued)

CONSTRAINT	HOW AFFECTS MITIGATION	PROSPECTS FOR CHANGE
Governmental - Federal (Continued)		
Limited federal capacity–personnel funding, travel $, etc.	Limits potential for federal partnership and/or assistance	LOW: unlikely to expand; look for opportunities to use leverage; target efforts
Weak federal mandates for hazard mitigation	Limits federal credibility and leverage	SOME: Congressional resolutions; potential executive order or OMB directive for multihazard mitigation
Governmental - Subnational		
Intragovernmental fragmentation -many entities -overlapping jurisdictions	Dissipates energies; linkage unclear	LOW: look for co-ordinating mechanisms; use existing channels
Limited subnational capacity–personnel, funding, travel $, etc.	Limits potential for sub-national partnership and/ or assistance	SOME: look for opportunities to use leverage; target efforts; fund hazards specialists at local levels
Nongovernmental - Private Entities		
Fragmentation: -many entities or associations -competing interests	Dissipates energies; linkage unclear	SOME: look for co-ordinating mechanisms; target efforts; create consortium
Professional groups as intermediaries: planners, code authori-ties, etc.	Professional practices take time to change	SOME: professional education efforts have had success

HAZARD MITIGATION--SELECTED CONSTRAINTS (continued)

CONSTRAINT	HOW AFFECTS MITIGATION	PROSPECTS FOR CHANGE
Legal		
Liability concerns (gvmnts, businesses)	Undermines willingness to recognize hazard	SOME: model acts, increase attention to costs of not taking action
Constitutional restrictions	Limits "taking," requires due-process actions	LOW: will not change, but not much of a problem
Economic or Financial		
Opportunity costs may outweigh benefits of mitigation	Makes it difficult to justify mitigation (e.g, hazardous bldgs)	LOW: particularly in already developed areas
Costs increasing: -insurance premiums (flood and earthquake) -cost-sharing requirements	Limits participation and undermines compliance	SOME: alter costs with subsidies, new rates
Behavioral - Individuals		
Hazard misperceptions	Limits willingness to take actions	LOW: has proved difficult to alter
Expected value of losses low, some likelihood of governmental assistance	Limits willingness to take action or buy insurance	LOW: can affect indirectly by altering disaster assistance practices
Knowledge of "what to do"	Limits ability to act	SOME: some success in providing educational materials
Compliance limitations	Undermine regulations	SOME: alter enforcement and incentives to comply

Working Group #3: Technology Transfer

Impediments to the Transfer of Technology and Information

The third working group identified major impediments to technology transfer. First, the group recognized that technology, like science, does not sell itself. Therefore, the transfer of technological information must be purposely directed from the research and development communities to users and decision makers. Technology transfer must be, then, a very active, deliberate process.

The working group identified and discussed a number of reasons for the failure to transfer technology, anticipating that by doing so, they could identify successful strategies for such transfer. Although the working group focused on technology transfer for hazard reduction, identifying reasons for failure to transfer all types of technology proved useful. The group felt that in the United States, the priority for basic research and development is greater than that for applications work. Therefore, the transfer and dissemination of valuable research often does not occur or occurs ineffectively.

Another reason for the failure to transfer technology is the lack of adequate follow through by information producers. Generally, the group agreed that there is a lack of knowledge and skill concerning how to effectively transfer technology. In addition, rewards and incentives for technology transfer are often missing. For example, Japanese builders are given financial incentives from the Japanese government for employing state-of-the-art construction practices for earthquake hazard reduction. Nothing comparable exists in the United States.

In sum, the group thought that technological information was usually packaged poorly. As an example, they cited the traditional use of reports, rather than demonstration projects, to disseminate information.

Other reasons for the failure of technology transfer included:

A) Failure to monitor the effectiveness of technology in place. For example, some state-of-the-art design practices implemented after World War II have proved inadequate for even moderate earthquake-induced ground shaking, yet it has taken large numbers of building failures and loss of life in earthquake after earthquake to effect any changes in building codes. As the working group suggested, there is an over-reliance on old, generalized solutions for the transfer of technology.

B) Using inappropriate technologies; using the wrong technology for a specific case or a specific locale. For example, some structural measures to defend against floods (such as levees) have actually created increased risk or contributed to greater flooding.

C) Inappropriate timing of the introduction or application of the technology.

Recommendations for Improved Transfer of Technology

After assessing these reasons for the failure to transfer technology, the working group recommended methods to increase the success of technology transfer in the future. These recommendations included:

- The identification of promising and appropriate technology;
- The adaptation of technologies to future opportunities and needs;
- The use of innovative, cost-effective techniques for integrating technologies;
- The development of strategies for implementation;
- The monitoring of the adoption process;
- The monitoring of the effectiveness of the technology.

The working group also suggested that technology transfer had to be pursued with greater persistence and tenacity, and further, that incentives be established for the continuing education of researchers, design professionals, the construction industry, public and private decision makers, and the

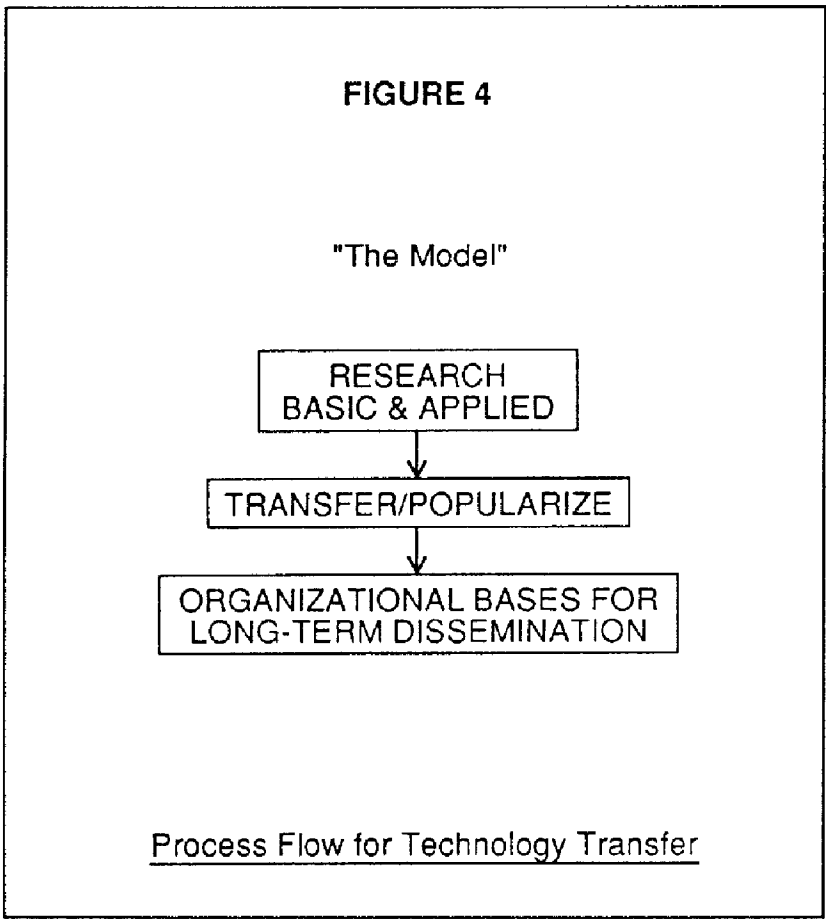
public. For technology transfer to be effective, the effort must be maintained and the interest sustained.

The transfer of technology also must be customized to reach specific users. The group recognized that it was critical that efforts to transfer technology be documented and evaluated. The participants saw technology transfer as a dynamic process and developed a scheme for describing the procedure (Figure 4).

In translating and communicating technological information, the working group suggested that information about specific technologies be oriented toward user needs. To do this, the group recommended establishing user-oriented frameworks and broader user applications. They also recommended that the transfer of technology be part of everyday work and operations, *but* that it also capitalize on "windows of opportunity" such as reconstruction and recovery after disasters. The group recommended demonstration projects, financial incentives, and the development of marketing techniques for hazard reduction.

The group also recommended institutionalizing technology transfer in key organizations, using existing processes for technology transfer, and mandating dissemination of technology as part of the research and development process. As an example, the group cited the technology extension service component of the 1987 Technology Transfer Act.

In summary, this working group recommended many ways and means for applying the practical information gained from research in the hazards field. However, they pointed out, one must recognize the real need for the political acceptability and economic sustainability of these processes if they are to be feasible. The group strongly felt that by using effective educational and marketing techniques, along with incentives, the technology transfer process for hazard reduction could be greatly enhanced.



Working Group #4: Private Sector Role

Role of the Private Sector in Hazard Reduction

The objective of the private sector working group was to determine what role the private sector could play in achieving the goal of increased hazard reduction in the 1990s and beyond. The group focused on identifying players who can contribute to the hazard reduction effort. Incentives to encourage greater private sector and nongovernmental organizational participation in hazard reduction were also identified.

The working group felt that initially public-private partnerships for hazard reduction should exist at and focus on the national level in order to publicize the goals of the U.S. Decade for Natural Disaster Reduction. Strong federal and state governmental support of public-private partnerships was cited by the group as necessary to encourage significant private sector participation. However, the group stressed that real success will only be achieved at the *local* level.

The working group outlined private sector roles, suggested possible incentives for private sector involvement in hazard reduction, and suggested possible private sector players (Table 2). In order to reduce hazards, all these groups need to be involved in the planning and implementation phases of the U.S. Decade for Natural Disaster Reduction or any other programs to reduce hazards. The working group made several recommendations for integrated private sector participation in such efforts.

Recommendations for Private Sector Participation

First, the working group recommended that there be greater private sector participation in program definition and planning for the U.S. Decade. The issue of strong leadership for the U.S. Decade was discussed, and several recommendations were made concerning possible liaison activities to encourage public-private interaction. Those activities could include:

- Keeping the private sector up-to-date on planning and implementation activities;
- Providing mechanisms for the private sector to actively participate in planning and implementation activities;
- Facilitating sponsorship and funding activities required in developing cooperative partnerships between the public and private sectors.

The working group suggested that leadership for the liaison activities be specifically designated. For example, a member of the U.S. national committee for the Decade or other funded facilitator(s) would develop contacts with the private sector. The working group envisioned that a major task for this person (or persons) would be the transfer of different types of hazards reduction information to public educational programs at the national and local level. Techniques to get the information into use would include publicity, marketing, and public relations.

The working group envisioned two phases for such a project. In Phase I, a prospectus describing the U.S. Decade for Natural Hazard Reduction would include a prominent section on public-private partnership as part of the activities for the Decade The prospectus would feature nationally focused and locally applicable activities for private sector and nongovernmental organization involvement as well as build the case for strong public-private partnerships. The working group felt it was important to point to examples of successful partnerships and activities already in place such as the Hurricane Hotline, the Alert Development and Implementation project, Cooperative Interpretative Weather Services, and the General Mills Weather Package. These examples, and others like them, should be promoted and expanded with the development of additional hazard reduction partnerships.

Phase II would involve the development of a model for state- and local-level committees or commissions organized to deal with natural hazard mitigation, preparedness, and response efforts within existing regional councils of governments. The working group felt that local committees would be most effective if formed under the aegis of local governments. Again, in stressing the public-private

partnerships, the working group suggested that the local committees or commissions include the following:

- Local emergency service agencies;
- Local planning and/or building regulatory agencies;
- Local utility companies;
- Local major private corporations;
- Local civic and/or business groups;
- Local news media;
- Local volunteer service organizations and groups;
- Local offices of federal and state agencies;
- Local university experts.

Again, the working group recognized that hazard reduction will continue to take place principally at the local level, and it was there that the group suggested integrated activities and partnerships must take place. Despite that reality, the working group recognized the need for strong national support of the U.S. Decade for Natural Disaster Reduction.

TABLE 2

PRIVATE SECTOR ROLES

1) Sponsorship (funding)
   Increasing Awareness
      Public Education
      Training
      Cooperative Funding of Technology
      - demonstration projects
      - market and sell Decade

2) Providing Expertise
3) Public/Private Partnership
   Standard Setting
   Dissemination
   Postdisaster Relief

PLAYERS

Insurance Industry
Banking Industry
Construction Industry
   heavy - infrastructure and high rise
   light - home
Trade Associations
Professional Societies
Media: Print, Radio, TV
Architects

Communications Industry:
- Hurricane Hotline
- active wake-up system

Materials and Equipment:
- structural materials vendors
- gas shutoff valves
- shatterproof glass

Voluntary Organizations
Engineers

INCENTIVES TO INVOLVE INDUSTRY

Self interest - industry will reduce own risk
Profits
Liability concerns - could be barrier
Good will
Positive public relations
Attribution
Community spirit
Employees and their families
New business ventures due to hazard mitigation (e.g., Alert system, consultants).
External Incentives (Tax incentives, etc.)

LOCAL LEVEL SOLUTIONS

Targets of opportunity
Illustrate positive and tangible results to sell concept of Decade.

RECOMMENDATION

Private sector should participate in formulating Decade activities.

Working Group #5: State and Local Role

The State and Local Role

The fifth working group considered goals for state and local agencies during the U.S. Decade for Natural Disaster Reduction (USDNDR), and the means for ensuring active and effective participation at the state and local level. The group discussed the importance of effective communication and promotion of Decade goals and stressed that implementation of the Decade will depend on what happens at the local level. Recognizing the need not just to inform, but to motivate local agencies and individuals, the working group addressed implementation strategies before talking about specific measures to be implemented.

First, the working group recognized that the development of any plan for hazard reduction must begin with, and must continually include, involvement by state and local governmental agencies and other local entities. Enabling legislation at county or municipal levels was considered vitally important.

Recommendations

Assessments of past hazard reduction successes and failures should be used to develop additional strategies for a Decade for hazard reduction that has specific, measurable goals within achievable time frames. Such a plan, according to the group, should call for local and regional assessments of all hazards. For example, multihazard mapping should be carried out in vulnerable areas throughout the United States, with the emphasis on urban areas at risk. In addition, mechanisms for disseminating risk information to local communities should be instituted and refined. Major initiatives for increased training of community leaders should also be undertaken.

The working group also suggested that to increase awareness of hazards and hazard reduction, the Decade program should call for and promote declarations (similar to the resolutions of California and Utah) by all states and many local entities. The awareness and political support generated by these declarations would help create a platform on which further support could be built among the constituencies necessary for successful of hazard reduction.

This constituency building could also take place through regional and local workshops in which hazard research and applications experts could work with local groups and policy makers. The group stressed that existing hazard reduction knowledge could be utilized in these workshops, and that political leadership was necessary for regional and local hazard planning. The group agreed that officials who have been personally involved in disasters are generally effective in community disaster planning. Additionally, the working group suggested the formation of more local/regional organizations similar to the Southern California Earthquake Preparedness Project (SCEPP), the Bay Area Regional Earthquake Preparedness Project (BAREPP), and the Central United States Earthquake Consortium (CUSEC). Other regional partnerships involving agencies at all levels of government, private enterprise, and volunteer, public service, and other nongovernmental organizations should also be established. In this regard, the working group noted the success of the Business and Industry Council for Emergency Planning and Preparedness (BICEPP) in Southern California, and the potential benefits of involving the banking and insurance industries.

Besides the partnerships with the private sector, the USDNDR should promote the utilization of other local resources such as colleges and universities and other research centers. For example, professional education and skill enhancement, both by universities and by continuing education programs, should be promoted; the USDA agricultural extension service was suggested as an appropriate model for such activity.

In addition to these suggestions, the working group recommended that the USDNDR include components that promote the exchange of information and expertise between cities and towns facing similar problems both within the U.S. and between the U.S. and other countries. For example, suggestions were made to share hazard reduction information through sister-city arrangements.

The working group also suggested that once in place, the USDNDR should include periodic reviews to assess and evaluate progress toward the goal of disaster reduction. The evaluation should take place

on a regularly scheduled basis, perhaps as often as every two years, and planning should begin immediately for the first of these evaluations.

Besides suggestions for goals for the USDNDR, the working group discussed the means to implement the goals. The consensus of the group was that the simple distribution of research reports on hazard reduction was not adequate and probably would not result in hazard reduction. Again, the working group emphasized that effective communication and promotion of the goals of the USDNDR were as important as the goals themselves. The members noted the tremendous problems of translating information into action at the local level, and in order to facilitate such transfer of information, recommended:

- Development of a plan with the initial and continual involvement of local agencies and individuals;
- "Showcasing" political leaders who do take an active interest in hazard reduction;
- Using "Madison Avenue" techniques to develop promotional products that increase awareness about hazards and hazard reduction;
- Identifying audiences for various types of information, including policy and decision makers, the general public, and children;
- Promoting hazard awareness in other educational curricula, e.g., geography;
- Promoting hazard reduction within the context of multiobjective planning; and
- Utilizing existing national associations and organizations with local chapters or groups to disseminate information.

The state and local working group recognized that there are other means through which the goals of the Decade could be implemented. For example, legislation could provide regulatory authority for hazard reduction. However, the group also recognized that nation-wide hazard legislation may not provide adequate hazard protection for *local* hazard conditions and that state and local regulations also must be promulgated. Similarly, incentives could also help accomplish hazard reduction. However, the group identified political will and public support as perhaps the two major components to any hazard reduction program. Therefore, they emphasized educational and promotional activities to create a more informed group of policy makers and a more aware public.

SOME UNRESOLVED ISSUES

Despite two and one-half days of long and intense discussions, and despite a sense that significant progress had been made in generating ideas and enthusiasm for the Decade, several important and some very critical questions concerning the USDNDR remained unresolved. This section briefly discusses those issues and attempts to convey some of the quality of the discussions while recognizing that absolute consensus was not reached.

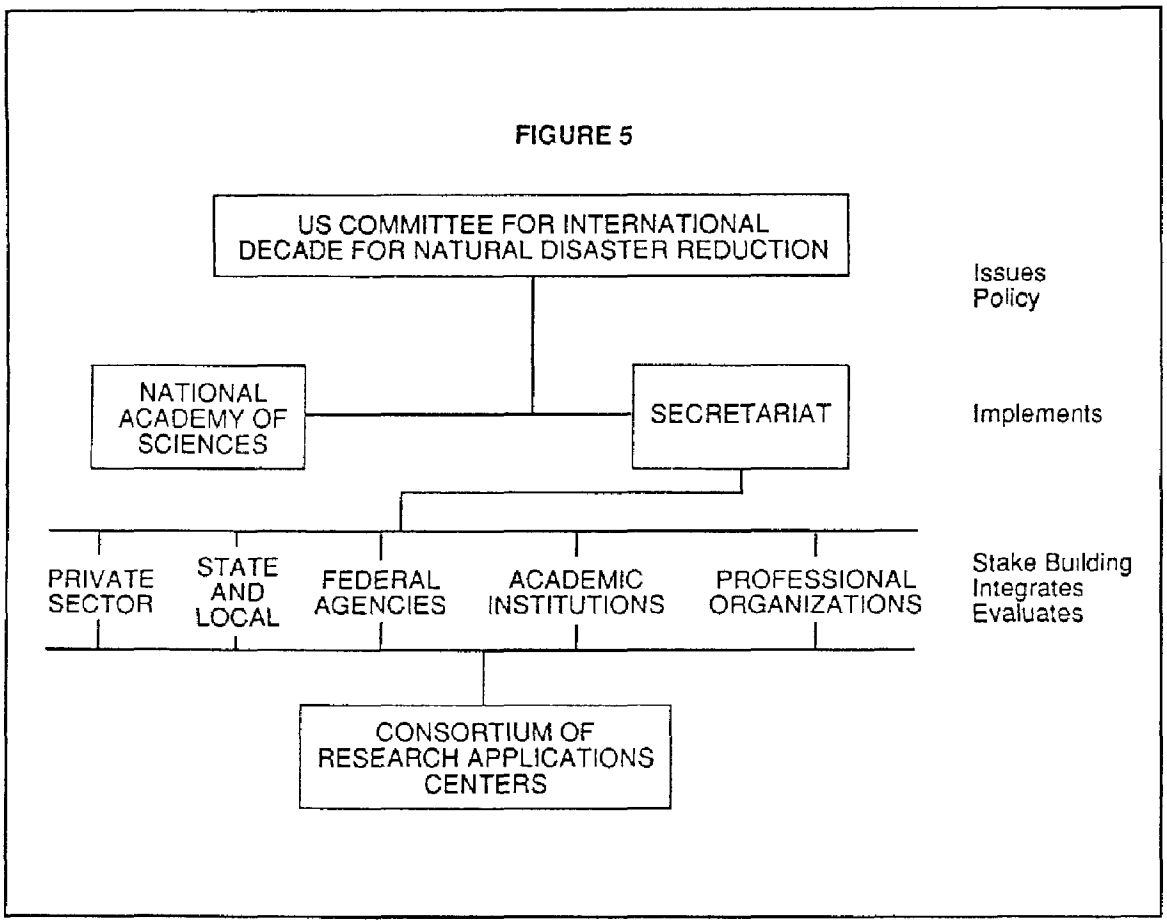
Structure, Leadership, and Organization

No other issue evoked more concern than the question of leadership and organizational structure for the Decade. Discussants argued that without good leadership and the development of an organization to receive ideas, link programs, and look to for inspiration, the Decade might flounder and become ineffective.

Discussions on organization gave birth to a rash of flow charts and organization diagrams, some of which are shown in the working group reports. Another organizational suggestion, formulated in discussions between federal agencies and the NAS after the workshop, is shown in Figure 5.

In keeping with the sense of the workshop that the Decade needed coordinated leadership at a national level, but would succeed or fail based on the ability of regional, state, and local programs to

FIGURE 5



make an observable difference, there remains a need to design an organizational structure that nurtures both national and local efforts. There was a strong call for creation of some formal structure soon so that emerging grass-roots, local, and state programs could point to a national program in support of their efforts. Again, existing programs needed to be recognized and incorporated into the Decade; some could quickly be turned into "showcase" efforts.

As suggested earlier, several participants noted the need for a show of executive branch support for the Decade in keeping with the Congressional resolution.

The Need for a National Assessment

Participants noted that the Decade needed a base of information and knowledge with which to operate and against which to measure future progress. Several participants proposed an initial assessment of hazards research and applications to set the stage for the Decade. They noted that assessments of selected hazards had been conducted in the past few years, and that a valuable step toward the Decade would be to pull these together, fill in the gaps, and prepare a full national assessment of the state of the art and practice in hazard reduction. This could be accomplished by identifying programs, trends, successes, failures, and emerging knowledge. It was suggested that the assessment could be accomplished quickly and efficiently through a consortium of hazards institutions collaborating to pull together existing assessments of sub-fields and to identify gaps in knowledge and applications.

The Nature of State and Local Programs

There was little disagreement with the proposition that state and local governments should be at the focus of Decade implementation efforts, and several good ideas for accomplishing this were offered. (Both a state (Tennessee) and a local (Boulder, Colorado) Decade effort were first conceived during the workshop.) The participants also discussed the creation of links between communities and the sharing of personnel and projects. One participant suggested a series of "circuit-riding" hazard reduction advisors who would make rounds of communities designing new programs, or a new hazards "extension service."

It is at the state and local level that the private sector is most likely to be effectively involved, and it was pointed out that it is at this level that several other organizations which should be a part of a Decade effort, such as the National Governors' Association, the League of Cities, and other similar entities, should be included. However, without some sort of leadership to provide guidance or a focal point, state and local as well as private efforts for the Decade may be uncoordinated and potentially ineffective and costly.

The Need to Quickly Enlarge the Audience for Decade Discussions

Participants identified several organizations that needed to be brought quickly into the Decade planning and implementation process, such as the National Governors Association, the International City Management Association, and Council of State Governments. Special presentations at upcoming meetings of professional societies and civic organizations were suggested, and again, some frustration was voiced concerning the need for a central statement and organizational theme and structure for the Decade.

Nevertheless, discussions ensued about the possibility of a national conference on the Decade, and about sending speakers to several different upcoming meetings, developing a market-oriented brochure, and sending letters to various organizations and government entities.

NEXT STEPS

The key next step identified at the workshop was for the federal agencies involved in hazards and the National Academy of Sciences to agree on an organizational structure at the national level, and for mechanisms to be developed whereby hazard groups at different governmental levels and other institutions could keep abreast of Decade development, and contribute to it as they see fit. The chart in Figure 5 emerged from discussions after the Colorado workshop.

Another important "next step" was identified as the creation of a set of broad goals for U.S. hazards programs to focus on over the next ten years. Several such "goal statements" were suggested, including, for example:

- Creation of a full multihazard reduction capability in each of the 50 states and all SMSAs;
- Institutionalization of mechanisms to continually monitor and evaluate U.S. hazard reduction programs;
- Development and maintenance of programs to ensure adequate educational opportunities for hazards and emergency management professionals;
- Integration of hazard management programs with other growth and environmental management programs as well as with economic development efforts.

A set of broad goals like these gives each level of government and all relevant institutions a focus around which to organize subset goals and objectives to complement the national effort. Such program planning could include short-range (1-3 years) and long-range (5-10 or more) horizons, with regular evaluations that can later be integrated at the national level to assess the progress of the Decade.

Other "next steps" are described in the working group reports. Several possible steps need quick action to benefit from the momentum currently building for the Decade. For example, a need for some sort of executive branch recognition and endorsement of the U.S. Decade was recognized, and the creation of a "transition paper" to inform the incoming administration about the Decade concept was proposed. Similarly, a program that tracks and nurtures state and local contributions to the Decade should be established quickly to provide focus to such efforts.

Additional "next steps" discussed at the workshop include:

- Creation of a national steering committee or advisory group broadly representative of the hazards field;
- An assessment of progress to date in hazard reduction, including a roster of existing programs, impact trends, and research progress since the last major assessment in the early 1970s, and identification of gaps in both knowledge and practice;
- A national, high-visibility conference on the Decade, as well as a plan to "market" the Decade's purposes goals;
- Designation of local or regional "demonstration projects" that can be brought under, or newly created as part of, the Decade;
- The creation of a consortium of institutions with expertise in hazard reduction to provide advice and assistance with such efforts as the creation of links between research and practice and the monitoring of its progress.