

## XII. Some Policy Options

In the previous section, information needs were identified in relation to four congressional functions: budget allocation, policy formulation, legislation, and oversight. Most of these needs could be met at the agency level, if stimulated by congressional oversight or by appropriations.

This chapter sets forth some suggested policy options for improving the management of flood hazards. These options are not recommendations but concepts for consideration. The options deal with:

- setting goals,
- land use management,
- a Federal opportunity: leadership by example,
- the National Flood Insurance Program (NFIP) as hazards manager,
- an all hazards approach to insurance,
- the Corps of Engineers' mission, and
- mapping.

### SETTING GOALS

The absence of goals specific enough to guide change and to evaluate progress is a major impediment to achieving an integrated strategy for flood hazards management. Three alternative, but not exclusive, goals are suggested below, that would allow standards of accomplishment to be defined and evaluated.

**Hypothetical goal 1.—The national objective over the next 10 years is to put flood insurance on a fully actuarial basis.**

**Hypothetical goal 2.—National policy is that over the next four decades population and physical investments in floodplains at the 100-year risk level shall be reduced by 80 and 70 percent, respectively.**

**Hypothetical goal 3.—The annual losses from floods as part of a national program shall be reduced by 25 percent per decade (in 1975 dollars).**

### LAND USE MANAGEMENT

Land use management is the most effective tool for managing flood hazards over the long term. Its

costs, however, are incurred in the short term and its benefits are deferred and difficult to evaluate. Therefore, it is politically the most difficult measure to implement.

Land use control could largely be used to remove land from residential and commercial use via acquisition by Federal, State, or local governments. Particular attention could be given in flood hazard areas to long-term land acquisition programs over a period of 30 to 40 years. The success of such a program might require a mechanism for freezing land values at some specified date. A plan that spanned 30 to 40 years could minimize the opportunity costs of redevelopment and deal with the question in terms of both the natural hazards lifecycle and the usual turnover time of structures of 30 to 40 years.

Acquisition should also be looked at from the perspective of other land tenure problems, such as those on agricultural land, recreational land, etc. This raises a more general question as to whether the national land tenure system itself might not be a suitable candidate for long-term re-evaluation and restructuring. Flood hazards management alone may be inadequate to motivate a re-evaluation of land tenure. But when viewed as concomitant with other developments such as man-made hazards, environmental concerns, preservation, and recreation, new tenure systems appear to merit consideration.

### A FEDERAL OPPORTUNITY: LEADERSHIP BY EXAMPLE

The large number of buildings and structures owned or subsidized by Federal, State, and local government that are located in flood hazard areas offer an opportunity for leadership in planning, siting, design, and construction practices.

A move in the direction of leadership assumption by the Federal Government appears to have been made by Executive Order 11988, May 24, 1977, which in section 1 states:

Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to

minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

## THE NATIONAL FLOOD INSURANCE PROGRAM AS HAZARDS MANAGER

At present, NFIP is a subsidized program that operates locally to monitor the regulatory process. Its function could be expanded to make it the chief instrument by which flood hazards areas would be managed. This could be carried out by utilizing insurance premiums as a financial base for local flood management programs.

## AN ALL-HAZARDS APPROACH TO INSURANCE

An argument has been made for an all-natural-hazards strategy for dealing with the multiple problems caused by natural events confronting man and his works. Such a strategy in which future floods would be incorporated together with other potential disasters, is treated more fully in a companion volume to this report, *Confronting Nature: A Preliminary Analysis of U.S. Policy Needs Related to Natural Hazards*. The present policy option focuses on a comprehensive catastrophe insurance program.

It has been noted by Anderson, an insurance authority, **that the present public/private insurance system is fragmented, unfair, costly, inefficient, and without incentives for loss mitigation. Therefore, he has proposed that a comprehensive catastrophe insurance system that would deal with all of these deficiencies be established. Such a program would consist of 13 parts:**<sup>1</sup>

- . standardized all-risk coverage **for all catastrophe perils except war,**
- . **broad territorial divisions,**

<sup>1</sup>Dan P. Anderson, "All Risks Rating Within a Catastrophe Insurance System," *Journal of Risk and Insurance*, December 1976, pp. 629-651.

- Federal subsidies,
- coverage for residential and small business properties,
- land use control and loss prevention requirements,
- incentives for participation,
- elimination of Federal disaster assistance benefits for private property,
- full availability of insurance,
- Federal reinsurance,
- establishment of catastrophe reserves,
- adequate limits,
- mandatory deductibles, and
- administration by a combination of the private and public sectors.

**According to Anderson, these are not independent units, but parts of an overall, interdependent system. The exclusion of any one of them could jeopardize the effective functioning of the overall program.**

**Anderson notes that the value of a comprehensive disaster/catastrophe insurance program has been endorsed by Dacy and Kunreuther, leading scholars of the disaster insurance field, who have pointed out that:**

If all disasters were incorporated in one package, the large adjusting expense incurred today when the actual cause of damage is determined would be obviated and overall rates could be lowered accordingly.<sup>2</sup>

**George Bernstein, former head of the Federal Insurance Administration (FIA), is also favorably disposed to all-risk insurance:**

Not only should classifications of insureds and territories be broadened but so too should coverage through the development of an all-risk policy offering full protection against a broad range of hazards. Under such a policy, all insureds could receive the same enumerated protections against such perils as natural disasters, fire, and theft. The Gulf Coast resident would receive protection against his much-needed hurricane exposure on the one hand and his less-needed crime insurance and earthquake exposure on the other; similarly, the midwest resident could be protected against tornadoes and fire and also against his moderate crime exposure. The eastern urban dweller would, under the same policy, be protected against his serious exposure to crime, fire, and riot, and also have earthquake and windstorm protection. The

<sup>2</sup>Howard Kunreuther and D. Dacy, *The Economics Of Natural Disasters* (New York: The Free Press, 1969).

west coast resident would have needed earthquake protection as well as mudslide and crime insurance. All of these residents would be paying for coverages they might not ordinarily purchase, but would be assured of receiving the essential protections that today are inadequately available to them. The pennies paid by policyholders for relatively unessential coverages would create a sufficient premium spread to enable insurers to cover the hazards they currently claim to be uninsurable.<sup>3</sup>

The current FIA administrator, Ms. Gloria M. Jimenez, in commenting on the National Governors' Association's plan for a national disaster assistance fund, pointed out the necessity of including loss reduction elements. She stated that such a plan must meet a number of requirements:<sup>4</sup>

- it must provide for effective loss reduction activities;
- it must provide for maximum participation by the private insurance industry;
- it must pay losses for nondisaster events as well as for those covered by disaster declarations;
- it must provide an appropriate transition from a federally subsidized flood insurance program;
- it must protect insurers against catastrophic losses; and
- it must make the insurance coverage available to all property owners, without discrimination.

## THE MISSION OF THE CORPS OF ENGINEERS

The historically key role of the Corps of Engineers in flood control civil works, coupled with the undoubtedly continuing need for such civil works, creates both a problem and an opportunity. The problem is how to enjoy the benefits of civil works while effectively integrating them with other strategies.

Consequently, there may be some major value in a broadly based examination of the historical role, successes, and shortfalls of the Corps' civil works programs with a view to recommending modifications of practices, custom, staff, orienta-

tion, etc. This topic might be suitable for an 18-month commission on the future of the Corps of Engineers.

## MAPPING DELAYS AND ALTERNATIVE ENTRY POLICIES

Mapping is a legislatively mandated prerequisite for joining the regular NFIP. Accomplishing the mapping is excessively time-consuming as well as extremely costly. This raises the question of whether there might not be some alternative procedure for entering the program more readily. At the same time, the existing structures could be improved. At some future time, the terrain could be reclassified to a riskier status.

A 1976 General Accounting Office study emphasized the formidable mapping problems in order to meet the statutory objective.<sup>5</sup> That study emphasized the need for accelerating the process of mapmaking. This option, however, suggests the possibility of proceeding more slowly with mapping, but building an organizational backup permitting the upgrading of regulations in certain areas as knowledge becomes fully developed.

The necessity to simplify the mapping requirement has been discussed by Dingman and Platt.<sup>6</sup> They suggest a number of possibilities:

- The flood hazard boundary maps, produced by NFIP, are already in the hands of local communities. If amended to eliminate gross errors, these could be used locally until better information arrives.
- A method long in use at the State level is the use of fixed setbacks from the stream center or bank in the case of small streams and creeks.
- Refer to the area inundated by the flood of record (largest flood to have occurred in an area) or other significant historical flood as the regulatory floodplain.
- Use the generalized relations between regulatory flood depth and readily measurable stream and/or drainage basin characteristics. Such an approach, using drainage area, stream width, and stream slope (measured

<sup>3</sup>George Bernstein, from Dan P. Anderson, "Development of the Principal Elements of a Comprehensive Catastrophe Insurance System," *CPCU Annals*, September 1975.

<sup>4</sup>Gloria M. Jimenez, Federal Emergency Management Agency, personal communication, Apr. 27, 1978.

<sup>5</sup>Report to the Congress by the Comptroller General of the United States, *Formidable Administration Problems Challenge Achieving National Flood Insurance Program Objectives*, Apr. 22, 1976, pp. 15-36.

<sup>6</sup>Lawrence S. Dingman and Rutherford H. Platt, "Floodplain zoning and Implications of Hydrological and Legal Uncertainty," *Water Resource Research*, vol. 13, No. 3 (1977), p. 522.

from topographic maps) as independent variables, was proposed in 1961 in Pennsylvania.

- Use normalized curves to estimate flood discharges and stages that reasonably correlate with regulatory flood stages estimated by traditional methods.
- The mapping of soils has also been shown to be a useful tool in identifying flood-prone areas in some regions.

**Any of these or other “shortcut” techniques inevitably trade elegance for economy and detail for efficiency.** It has been suggested that the elegance

and detail of even the most sophisticated floodplain maps may be illusory. But unquestionably, courts are impressed with the sheer cost and weightiness of floodplain reports. Will less impressive techniques pass muster when legally challenged? Recent judicial trends indicate that if a community proceeds in good faith and to the best of its ability to try to protect the lives and investments of its citizens, the law will not stand in the way.<sup>7</sup>

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