

THE IMPACTS OF NATURAL DISASTERS ON THE POOR: A BACKGROUND NOTE  
 [Submitted by Mary B. Anderson to Cornell University  
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A. The Questions:

To understand the impacts of natural disasters on the poor, it is important to consider four questions:

1. How natural are so-called "natural" disasters?
2. Why do the impacts of such disasters affect poor people and rich people differently?
3. How do "natural" disasters affect poor people and poor societies?
4. Who has the capacity (ability and/or power) and the responsibility for lessening the impacts of disasters on the poor?

B. Findings Regarding these Questions:

B.1. How natural are so-called "natural" disasters?

The term "natural disaster" is used to refer to catastrophes that arise from acts of nature such as flood, wind, drought and earthquake. However, many people have challenged this terminology as misleading. As long ago as 1976,<sup>1</sup> Frederick Krimgold defined a disaster as an event that outstrips the capacity of a society to cope with it. This definition highlights the fact that not every natural crisis event becomes a disaster. Disasters occur only when a natural event damages or destroys human lives and property to such an extent that a society is disrupted. A high wind in an unpopulated area may fell trees and alter landscapes, but it is not considered a disaster if there is no human suffering or damage of property on which humans rely for their welfare. It is the interaction of acts of nature with human decisions and actions that result in disasters.

Thus, "natural" disasters occur when nature's perturbations strike in areas or among groups of people who are vulnerable to them. Human decisions and actions increase, or decrease, such vulnerability. For example, reports from the August 1999 massive earthquake in Turkey confirm that the tremors had their devastating impact because building codes had been repeatedly violated. Where these codes had been followed, buildings withstood the tremors. Decisions not to enforce codes, actions to bribe inspectors to ignore violations, failures to follow through on inspections, and decisions (or the necessity) by poor people to move into what they knew to be "cheap" housing--these decisions and actions--caused this earthquake to become a massive disaster.

Understanding that disasters represent the interaction of human decisions and actions with nature is important because a) it helps us identify the causes of disasters and b) it leads to the conclusion that many (probably, most) "natural" disasters can be avoided by

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<sup>1</sup> Frederick Krimgold in: Overview of the Priority Area Natural Disaster, United Nations, New York (15th October 1976).

appropriate prevention, preparedness and response systems. "Natural" disasters need not occur.

### B.2. Why do "natural" disasters affect poor people and rich people differently?

First, experience shows that poverty is a major factor in increasing disaster vulnerability. Most disasters occur in poor countries and the people who suffer the most are usually those who are poor.<sup>2</sup>

There are many reasons for this differential impact. Poor people live in less well-constructed houses than their better-off compatriots, and these are more susceptible to destruction by wind, flood or earthquake than stronger, more expensive housing. Poor people very often live on lands that are marginal and subject to flooding or drought. They have few or no savings to protect themselves in crises; they cannot afford insurance. They have few options for escape when a natural crisis is predicted because such options cost money. They have less schooling than richer people and, thus, enjoy fewer employment options when a natural event undermines their livelihoods. They may suffer from ill health or malnutrition.

Second, many of the important decisions about what to spend to reduce disaster vulnerability are made not by individuals but, collectively, by towns, regions and nations. Disaster preparedness, prevention and response policies and programs can reduce--even eliminate--vulnerability. However, in many societies, because the poor are marginalized politically and do not participate fully in decision-making structures, their interests are overlooked or minimized in relation to the interests of those who have power and access to decision-making. We have seen that wealthy contractors can sometimes bribe government inspectors to ignore building code violations, and the poor have little power to protest and few choices about where to live since these buildings are the only ones they can afford. Because disaster preparedness and prevention cost money, wealthy people may vote not to undertake a flood plain project, for example, if they live on high ground though the poor live in vulnerable locations. Collective decisions about society's disaster policies are often dominated by those who have private resources and less to lose in the event of a crisis. Often the decisions and actions of one group affect the disaster vulnerability of other groups.

### B.3. How do "natural" disasters affect the poor?<sup>3</sup>

Disaster costs are assessed in three categories: direct costs (such as losses of capital stock and inventories); indirect costs (such as lost income, employment or services that result from damaged productive capacity); and secondary costs (representing decreases

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<sup>2</sup> UNDRO, The Protection of Human Settlements from Natural Disasters, Geneva, Feb. 24, 1976.

<sup>3</sup> For a fuller discussion of these points, refer to Mary B. Anderson, Analyzing the Costs and Benefits of Natural Disaster Responses in the Context of Development, Environment Working Paper 29, The World Bank, Mary 1990, pp.13-18.

in economic growth and development that occur as a result of such things as increased debt, inflation, price changes that have redistribution effects and the like).

Disasters have effects on people, individually, and on societies, collectively. There are two ways that the impacts of disasters are more extreme on poor people and poor societies than on people and societies that are better off.

First, although the actual value of property that can be lost through disasters in wealthy societies is higher than in poor societies,<sup>4</sup> losses as a percentage of wealth (individual or national) are higher for poor people. Monetary valuations of property losses do not tell the whole story. For example, if the only national university in a poor country is destroyed by a natural crisis, one-hundred percent of the higher education facilities are lost whereas the loss of a single university in the U.S. might cost more dollars to replace but it represents a less significant loss in terms of total national wealth. One can make similar calculations at the individual level.

Likewise with regard to indirect costs, losses for the poor may have more devastating impacts though the monetary value assigned to losses of the rich may be higher. For example, if one school teacher in the United States dies in a catastrophe, the monetary loss of his or her expected lifetime earnings would be higher than that for an individual school teacher who dies in a disaster in Tanzania. However, if the latter were the sole teacher in a village, the proportionate loss to education for a group of children would be more significant than in the wealthier country.

In terms of secondary costs, monetary calculations can also be misleading. For example, if a disaster results in food shortages and, thus, increases in food prices, better-off people may actually spend more on food than poor people, but the latter may experience a greater impact on total income because they spend a higher proportion of income on food.

The second way that the effects of disasters fall more heavily on poor peoples than on rich is through the mutual reinforcement of disasters and poverty. Disasters are both a cause and an effect of poverty; and poverty is both a cause and effect of disasters. For example, environmental degradation increases the likelihood of some disasters, such as flood, drought or ocean wave damage. But, poor countries cannot afford to take the initiatives to curtail such damage and its continuation perpetuates vulnerability to future disasters that, in turn, contributes to further degradation. Repeated loss of commercial crops, destruction of industrial sites or dislocation of a work force can undermine incentives for investment in economic enterprises. However, such investment is essential if the cycle of unemployment and poverty is to be broken. Destruction of local goods often necessitates increases in imports. The cost of increased international debt falls more heavily on poor countries which then have fewer remaining resources to invest in domestic production. Repeated and frequent losses from natural disasters undermine

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<sup>4</sup> This is because there is more property of higher value to be lost. The dollar value of rebuilding a mansion washed away during a storm from its ocean cliff site is higher than the cost of replacing a hovel in an Asian slum.

creativity, motivation and other entrepreneurial incentives that are at the base of poverty reduction.

#### B.4. Who Has the Capacity and Responsibility for Changing the Impacts of Disasters on the Poor?

As we turn to consideration of what actions can be taken and by whom to lessen the negative impacts of disasters on the poor, it is critical to return to the first question of this note--namely, "how natural are so-called natural disasters?" Because these disasters result from interactions between humans and nature, humans have power over their impacts. Humans can alter their interactions with natural events and, by doing so, prevent or mitigate all natural disasters.

Some actions to reduce disaster vulnerability are costly in time, political capital and material resources, requiring agreement and planning across broad geographical areas and large financial investments. Other actions can be taken by individuals or local communities and cost very little in monetary terms. Which of these are required depends largely on the type of natural crisis event under consideration and on the conditions and distribution of disaster vulnerability that exist as a result of past decisions and actions. That is, expectations about future hazards (the likelihood of their breadth, frequency and severity) as well as the "starting point" conditions which must be changed to achieve vulnerability reduction, should both be considered in disaster policy development and planning at both macro and micro levels.

What can different actors do?

#### The Poor:

Poor people have resources and capacities that can--and often do--reduce their disaster vulnerability. What are the ways that the poor can take initiative and responsibility for reducing the impacts of disasters?

While poverty is one important factor in disaster vulnerability, it is not its sole determinant. Experience shows that in some disaster situations, a close-knit poor community has been able to withstand the trauma and destruction of a natural crisis more effectively and with fewer losses than nearby wealthier communities. For example, in the Mexico City earthquake of 1985, one well-organized barrio called Tepito eschewed all outside aid, noting that they were able, as a community, to salvage building materials, reconstruct their shanties, and reopen their small nonformal enterprises far more quickly than their neighbors who lived in expensive high-rise apartments, who did not know or come to the assistance of their neighbors, and who depended on city services and transportation systems to reconstruct their homes or to return to work.<sup>5</sup>

Research shows that, in addition to material poverty or wealth, there are two other categories of capacities or vulnerabilities that affect people's abilities to cope with natural

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<sup>5</sup> Personal communication with members of the Tepito barrio, 1985 .

crises.<sup>6</sup> These are the social/political arrangements by which they act and the attitudinal/motivational qualities that affect people's sense of efficacy and ability to take initiative. Even though poor people do not have as many physical or material resources as the rich, they may have strong community networks or a sense of pride and common identity that enable them to manage crises effectively.

In many circumstances, these have proved as effective as costly material inputs in the prevention, preparation and response to crises. One housing consultant reports that when he arrives in a poor community to do a damage assessment after an earthquake, he always begins by asking the community to give him a walking tour of their area. As they walk together and more and more community members gather, he asks them to explain the damage--why have some buildings, or parts of buildings, remained standing while others in the same area are completely destroyed. By the end of such a tour, he is always able to turn to the local (poor) people and tell them that they need no outside "expert" help. They know which construction is earthquake resistant and which is susceptible. They know which local materials are safe and which are not. He then can agree to provide appropriate support to the existing capacities of the community as they take initiative and responsibility for rebuilding an earthquake resistant housing stock.<sup>7</sup> He notes that many other disaster response programs send in external contractors and imported building materials to accomplish the same goal--an approach that is both more expensive and that undermines local expertise and initiative, essentials for sustainable development. This is only one of enumerable field-based examples of how the capacities of the poor, themselves, can be applied to lessening, or eliminating, the impacts of natural disasters.

#### What Is Required of Others?

We noted above that, very often, the decisions and actions of some groups affect the disaster vulnerability of others and that, often, poor people who are marginalized or relatively less powerful have little control over these. In addition, some types of disaster prevention are costly in both organizational and financial terms.

Broad agreement, decision-making, policy development, planning and implementation are necessary where the causes of disaster vulnerability a) involve multiple localized decisions that, together, cumulate to increase disaster vulnerability (such as when many individual small farmers and pastoralists increase their own holdings by plowing another hectare or buying another camel and the carrying capacity of land and water are, thus, exceeded); b) are geographically spread across an area over which different governments hold sway (as when decisions about water usage, channeling, and even about which forests to cut taken upstream affect the probability and severity of flooding downstream; c) economic or other interests compete so that some people stand to gain from decisions/actions that worsen the vulnerability of other groups (building contractors

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<sup>6</sup> Mary B. Anderson and Peter J. Woodrow, Rising from the Ashes: Development Strategies in Times of Disaster, Westview Press and UNESCO, Boulder and Paris, 1989.

<sup>7</sup> Anderson and Woodrow, 1989, p.81.

make higher profits if building codes are not enacted or enforced); and d) the monetary resources required for prevention/mitigation are beyond the capacity of any local group.

### C. Methodologies Used to Gather these Findings

A number of people have examined the impacts of so-called natural disasters on poor people and societies in many locations over many years. Some have garnered evidence through comparative case studies, gathering the experience of poor people who have experienced disasters and of aid workers who have worked alongside them as they have faced these crises. Others have relied on data analysis, gathering statistics about direct, indirect and secondary costs within particular poor countries and/or gathering such data across rich and poor countries and comparing the two. Because data about the incomes, livelihoods and other circumstances of poor people (and in poor societies) are often imprecise, a combination of the two methodologies has been useful in producing a convincingly clear picture of how poverty and disasters interact. Importantly, most data gathering efforts have verified the "softer" conclusions drawn from case study analysis.

### D. Policy Implications

Given the discussion in Section B.4 above, it is clear that policies intended to reduce disaster impacts among the poor must take account both of what poor peoples can, themselves, do to reduce their vulnerability and of those broader actions that are required for disaster prevention. Thus, policies must:

1. Be based on the understanding that "natural" disasters are the result of interactions between nature and humans;
2. Be designed to recognize, support and build on the strengths and capacities of those most likely to be victimized by the given crisis;

and

3. Identify and promote broad (sometimes but not always large-scale) efforts that address and overcome localized interests that exacerbate disaster vulnerability. Because there is competition between individual and/or localized interests and those of the broader community, inter-regional structures must be developed to institutionalize enforcement of regulations, codes and protocols that are known to reduce disaster vulnerability.

E. The literature on the relationship of disasters and poverty is enormous and growing daily. Here we list several of the "classic" works in the field as an introduction to the research and the issues it covers.

Anderson, Mary B. and Peter J. Woodrow, Rising from the Ashes: Development Strategies in Times of Disaster, Westview Press and UNESCO, Boulder and Paris, 1989; reissued in 1999 by Lynne Rienner Publishers, Boulder, Colorado.

Cuny, Frederick C., Disasters and Development, sponsored by Oxfam America, Oxford University Press, Oxford, 1983.

Hagman, Gunnar (with Henrik Beer, Marten Bendz and Anders Wijkman), Prevention Better Than Cure: Report on Human and Environmental Disasters in the Third World, Swedish Red Cross, Stockholm and Geneva, 1984.

Kreimer, Alcira and Michele Zador, eds., "Colloquium on Disasters, Sustainability and Development: A Look for the 1990s," Environment Department, Policy Planning and Research Division, The World Bank, Washington, D.C., December 1989.

Kreimer, Alcira and Mohan Munasinghe, eds., Managing the Environment and Natural Disasters, Environment Department, Policy and Research Division, The World Bank, Washington, D.C., 1991. This volume contains a number of articles that highlight various aspects of the relationships between natural disasters and poverty.

Krimgold, Frederick, Overview of the Priority Area Natural Disaster, United Nations, New York, October 1976.

Wijkman, Anders and Lloyd Timberlake, Natural Disasters: Acts of God or Acts of Man? International Institute for Environment and Development, Washington, D.C., 1984.

World Disasters Report, International Federation of Red Cross and Red Crescent Societies, Geneva, This Report is issued yearly and many of its volumes deal with the relationships of disasters and poverty.