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Disaster and Development: El Salvador 2001

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RESEARCH QUESTIONS AND METHODS

Preliminary Questions

I visited El Salvador for eight days, 30 March - 6 April, 2001. My main focus concerned the degree of citizen involvement in the planning of recovery and the degree to which recovery was incorporating mitigation of the impacts of future extreme natural events (more earthquakes, hurricanes, flooding, volcanic eruptions). My subsidiary research questions concerned whether and how the rebuilding of some 200,000 houses would incorporate seismic and wind resistance, and, where appropriate, flood proofing, and what steps were being taken to mitigate future secondary hazards related to earthquake damage: landslides and flash flooding due to rubble and debris in watercourses and

drainage structures.

Research Methods

My methods involved both in-depth interviews with key informants in academia, non-governmental organizations (NGOs), and municipal government, and also participant observation. The latter grew out of my pre-visit involvement in providing international access to NGOs to an international reference group through establishing a web site called RADIX at Anglia University and my parallel engagement in the situation as a board member of American Friends Service Committee's Emergency and Material Aid Program as well as the Earthquakes and Megacities Initiative.

On the basis of these prior contacts I met with the city council of San Salvador to discuss citizen involvement in recovery planning and the mitigation of future hazards. I also hosted a series of seminars as a Visiting Researcher at PRISMA, an NGO focused on urban and territorial planning. Discussions and contacts at these seminars provided me with contact with a cross section of researchers from academia (the University of El Salvador and University of Central America) and a cross section of NGO representatives in sectors including rural and community development, environment, popular education, and human rights (Appendix 1: [Institutions and Organizations Contacted](#)).

A focal point of my seminars, used as a point of departure to stimulate conversations about disaster risk reduction in El Salvador, was an 11-minute trailer for a video I was then in the final stages of producing. This documentary concerns efforts by municipality and citizens in greater Mexico City to reduce social vulnerability to disasters. Used in this manner, the seminars became focus group discussions guided by a set of key questions (see Appendix 2: [Focus Group Protocol](#)).

Finally, during my visit I made extensive field visits to sites in greater San Salvador, including investigation of the site of the landslide in a suburb, Santa Tecla. A series of photographs, including detailed documentation of the Las Colinas landslide in Santa Tecla resulting from these field visits, together with my commentary, may be viewed at <http://www.afsc.org/emap/help/wisner/razwire.htm>.

Broader Questions

In the course of this work and subsequent reading and discussion, I have been led to ask a more comprehensive set of questions about the role of disaster in development, and vice versa. The fact that these earthquakes came not long after Hurricane Mitch, the end of a civil war, and the collapse of the coffee export price affected not only their physical, human, and economic impacts but influenced the social and political response on the part of citizens. In a similar way, the recovery process has been complicated by additional floods and landslides as well as economic disasters including hailstorms that destroyed crops and a prolonged drought.

The cascade of consequences continues. For example, children are dying of untreated upper respiratory infections because:

- their resistance to disease has been reduced by hunger during the drought,
- rural health posts where they would have been treated with antibiotics have not been rebuilt following earthquake damage, and
- crops have failed and the coffee price is very low, parents have little money for public transport to take sick children to major towns or to the capital where they might receive health care.

At the end of 2001, recovery is still in question.

BACKGROUND: THE EARTHQUAKES OF EARLY 2001

It was 10:33 A.M. in El Salvador, a Saturday morning, 13 January 2001. Shoppers were busy in the commercial streets of Santa Tecla, one of the suburbs that snake out in narrow valleys among volcano slopes and outlier ridges from the

old heart of the capital, San Salvador. In rural towns, villages, and on farms, livelihoods based on export of coffee and bananas as well as production of livestock, maize, beans, and rice for local sale was in full swing.

Fifteen seconds before, some 40 km deep in the strata below the Pacific Ocean, rock cracked under the stress of being forced yet further underground. A burst of energy exploded from this crack in the Cocos Plate, one of six massive pieces of the lithosphere that float upon the earth's hot mantle, jostling in a slow motion at this place on our planet's "ring of fire." The energy released was equivalent to more than a thousand million kilograms of high explosive. It rushed out in all directions from the fault in a series of four different kinds of waves, all traveling at different speeds and amplitudes. First the earth gave a sudden jolt, like the shunting of a long train as it begins to move, but very much stronger. Then it began to undulate in waves.

Above the suburb of Santa Tecla, the ground acceleration from the 7.6 magnitude earthquake loosened moist soil derived from young rocks made of wind-blown volcanic ash. Where tree cover had been removed on this steep slope in preparation for building luxury view homes, the hillside failed and slid down onto a residential neighborhood called Las Colinas. Four hundred houses were buried, and 700 people died.

There were thousands of aftershocks including a very large one in February that caused additional deaths. Especially tragic was the death of school children who were in buildings that had been damaged in January and finally collapsed in February.

The rest of the capital was not heavily damaged as it had been in 1986 and prior earthquakes and volcanic eruptions. The Pan American Highway and many other roads were blocked by other landslides. Elsewhere in the country, unreinforced brick and adobe structures collapsed: homes, granaries, warehouses, churches, clinics, and schools.

In all, the impacts of the two earthquakes and thousands of aftershocks included 1,159 people killed, 8,122 injured, and more than 150,000 homes destroyed. An additional 185,000 homes were damaged. Infrastructure was also heavily affected, including damage to 23 hospitals, another 121 health care units, and 1,566 schools. That is roughly 40% of hospital capacity, and likewise, 30% of the nation's schools. Total economic loss was estimated at \$1.255 billion.

These losses were less than those produced by the catastrophe that occurred about the same time in Gujarat in India. However, for a small country of 6 million people, a society struggling to reorganize itself following a long civil war, and a weak economy, El Salvador's earthquake losses were very significant. The economic losses amounted to 10% of gross national product (GNP) and one-half of the annual national government budget.

FINDINGS

1. El Salvador's national government has not taken advantage of the lessons from nor fulfilled the commitments made after Hurricane Mitch.

The declaration signed by post-Hurricane Mitch recipients and donors in Stockholm in 1999 called for partnership to (UNDP, 1999):

- Reduce the social and ecological vulnerability of the region;
- Reconstruct and transform Central America on the basis of transparency and good governance;
- Consolidate democracy and good governance, reinforcing the decentralization of governmental functions and powers, with the active participation of civil society;
- Promote respect for human rights, including equality between women and men, and the rights of children, ethnic groups and other minorities;
- Coordinate donor efforts, guided by priorities set by the recipient countries;
- Intensify efforts to reduce the external debt carried by countries of the region.

The analysis that underlies these general principles, agreed to by all the parties, donors, and Central American

governments alike, was based on some concrete lessons concerning disaster vulnerability and hazard mitigation taught by Hurricane Mitch.

It was generally agreed in the focus group discussions that national level policies and practices had not changed despite the rhetorical commitment to the post-Hurricane Mitch Stockholm Declaration and that this lack of change had contributed to the country's losses in the 2001 earthquakes. Focus group discussion addressed specific aspects of the Stockholm Declaration commitments in detail.

Social Development as Vulnerability Reduction. The government of El Salvador seems to have recognized lessons about the importance of public health and access to health care as a way of reducing vulnerability to events like Hurricane Mitch (GOES, 1999).

With the subject of public health, [Mitch] has revealed the greater vulnerability in the rural and urban marginal areas in terms of water-related diseases and lack of sewage: cholera, transmissible diseases, and in general in the lack of access to primary health and hospital services.

Its analysis also highlights "an epidemiological situation characterized by infectious/contagious diseases linked to the water and endemic malnutrition that are activated when an extreme environmental situation is added to normal conditions of insufficient habitat and lack of sufficient services" (GOES, 1999). It continues:

The modernization of the Health Sector and the necessities for changes are not facilitated by the existing framework that establishes a health system structure in need of modification with regard to the responsibilities of various institutions that must redefine their mission to meet the health challenges of the next millennium.

In reality little has been done to restructure, reorient, and better finance the health sector in the years since Hurricane Mitch. On the contrary, during 2000 there were protests by health care workers as well as consumers who believed that the government was not committed to public sector health care and wanted to privatize all health services in the country.¹ Words such as "restructure" and "reorient" could well be code for such privatization, especially in light of passage of a law privatizing water supply. In a country with such a high proportion of low income citizens, it is hard to imagine that privatization of health care and water supply would have the effect of increasing access to such services, thus reducing vulnerability.

In addition, despite such rhetorical commitment to a health care system capable of responding to extreme events, in the aftermath of the 13 January 2001, earthquake, El Salvador had lost use of 39% of its hospital beds (PAHO, 2001). The engineering necessary to protect hospitals and non-structural measures as well have been well known and widely disseminated by the Pan American Health Organization since the Mexico City earthquake in 1985.²

Poverty Reduction and Livelihood Security as Vulnerability Reduction. Some root causes of vulnerability seemed apparent to El Salvador's central government in 1999. It lamented the existence of a "depressed family and rural economy blocked not only by a deficient infrastructure network and lack of production services but also limited by fragmented and oligopsonistic markets [control by a few buyers of markets for rural goods]." It also faults "a financial structure insufficiently developed at the local level to respond to the requirements of the small farmers" (GOES, 1999).

However little has been done since Hurricane Mitch to stem the rural crisis that continues to drive farmers off the land in search of employment in neighboring countries, in the U.S., or in San Salvador. Indeed, the land reform³ that was designed to provide rural livelihoods for ex-combatants from both sides of the civil war, and which was a critical part of the peace agreement, has never been fully implemented. Secondly, any efforts to give priority to the needs of small producers in rural El Salvador would have to reverse years of extreme neglect. For example, between 1990 and 1998, only 10% of credit went to agricultural and livestock production. Of this, 79% of production credit went to coffee producers. Only 2% of agricultural credit went to those producing food. (Flores, 2000). Thus, putting into practice the lessons of Hurricane Mitch concerning sustainable livelihood security would have required a sea change in government policy, which was not forthcoming.

Structural Mitigation and Emergency Preparedness. Another lesson of Mitch was the need to improve the quality and location of homes in order to address "a deficit of adequate housing for healthy family life in addition to the concentration of fragile housing under high-risk environmental conditions" (GOES, 1999). Given the highly politicized and controversial nature of land tenure in El Salvador, little was done in the post-Hurricane Mitch period to resettle vulnerable people in safer locations. Emphasis was laid, instead, on building new dams and levies, and on attempts to develop flood warning and evacuation systems.

The problem of poor housing quality in dangerous locations persists. Indeed, some "temporary" housing built following the flooding in 1998 had become "permanent" by 2001 and collapsed in the earthquakes. A more systematic review of housing policy and construction norms might have been the result of generalizing the "lessons" of Hurricane Mitch, had there been political will. Housing stock in El Salvador is generally poor and thus vulnerable to damage from many kinds of events: flood, landslide, seismic shaking, liquefaction, and high wind. By contrast to official policy in El Salvador, Costa Rica had legally banned the use of non-reinforced adobe or bamboo residential construction by the 1930s.

In 1999, the El Salvador government acknowledged "the need to strengthen a modern national system for prevention and immediate response to disasters based on an adequate cooperation between the local and central levels" (GOES, 1999). However, the majority party in that government did not allow a draft law⁴ to pass the National Assembly that would have established precisely such a "modern national system for prevention and immediate response." As a result, the country has retained its National Emergency Committee (COEN) that is only focused on response, not prevention. In addition, although theoretically a national "system" in the sense of cooperation among numerous institutions and levels of government, COEN has remained centralized, and in the view of opposition political parties, many municipal mayors, and much of civil society, a closed "club" used for distributing relief aid among supporters of the ruling ARENA party.

Environmental Management as Disaster Mitigation and Prevention. Prominent among causes of vulnerability to disaster identified in 1999 was "a damaged environment caused by the improper utilization of the watershed slopes incompatible with the sustainable use of the soil and forestry resources" (GOES, 1999). If only this lesson had been learned from Hurricane Mitch, many of the landslides that followed the earthquakes in 2001 might have been prevented.

2. So far citizens have had little voice in disaster recovery and prevention decisions, and NGOs have been divided and competitive in their attempts to represent the interest of stakeholder groups.

There may be as many as 3,000 non-government organizations (NGOs) in El Salvador. They are diverse and include larger and smaller international INGOs, government sponsored or related GRINGOs, political party dependent PONGOs, as well as more independent national or regional and municipal NGOs. Some are church related and some are not. Some take the form of think tanks, monitors of human rights, or the situation of particular groups, such as women or the elderly while others provide specific services such as production of popular education material.⁵ Other groups are not registered with the government as NGOs and function more as social movements.

Since Hurricane Mitch a variety of NGOs have been very active in calling attention to the fact that the central government's actions were not living up to its commitments in the Stockholm Declaration. They were instrumental in researching and promoting the unsuccessful draft law on prevention of disasters. Several worked with communities affected by Hurricane Mitch, developing participatory planning methods as they did so, and the result has been some successful models of low input sustainable agriculture and aquaculture, as well as low cost models for wind and flood proofing rural houses.

After the recent earthquakes, a large number of these groups have become active in different parts of the country in recovery activities. Growing out of this experience, a broad cross section of Salvadoran civil society developed a "Citizens' Declaration on Reconstruction and Development of our Country" (2001).⁶ The signatories were more than a hundred very different kinds of NGOs and other groups, associations, and organizations. This document pointed out

that the government has not implemented the commitments made in Stockholm to reduction of social and environmental vulnerability, to decentralization, and to transparent governance and decision making. It proposed three immediate priorities for recovery: housing; employment and livelihoods; and reduction in social and environmental vulnerabilities. In this, it is not far from the spirit of the nominal allocations in the Madrid plan for earthquake recovery I discussed earlier.

The "Citizens' Declaration" diverged, however, from government plans in the suggested manner of implementation. This cross section of civil society demanded implementation "according to truly decentralized, participatory, and coordinated schemes at national, regional, and local level; with a perspective that takes into account social equality, gender, and environmental sustainability."⁷ They also demanded a process of preparing the plan to be presented at Madrid that would include "mayors, communities and the [earthquake] affected population, opposition political parties, business people, and citizen-based organizations." While at the last minute the central government delegation invited the chair of the Corporation of Municipalities of El Salvador (COMURES) and some other public intellectuals, the production of the plan was not at all inclusive.

Finally, the "Citizens' Declaration" called for the establishment of a permanent National Disaster Fund and the reintroduction and passage through the National Assembly of a law that deals with disaster prevention, mitigation, and territorial planning.

3. There are enormous problems and challenges facing effective decentralization of disaster risk reduction and empowerment of the citizens.

Focus group discussions identified the following problems and challenges to effective decentralization to the municipalities of El Salvador.

Unfunded Mandates. Neoliberal thought seized state power in the early 1980's, with the ascendancy to national leadership of Ronald Reagan in the U.S., Margaret Thatcher in U.K., and Helmut Kohl in (then) West Germany. Soon municipal governments from Los Angeles to Manchester to Cologne were complaining about "unfunded mandates," a form of decentralization of central government responsibilities without funding or resources.

It is therefore not surprising that one finds the same thing going on in El Salvador, beginning at the time of its civil war from 1980 to 1992. A total of \$6 billion in military aid poured in from the U.S. and with it great influence over the economic and political philosophy of the conservative ARENA party, then, as now, the ruling party in El Salvador.

Again one finds a striking contrast between central government rhetoric and reality in the issue of decentralization. In its description of its "Strategic Vision: The Local Development Program (PDL)" (part of the post-Hurricane Mitch recovery plan), the Government of El Salvador says all the correct things (GOES, 1999):

"The Local Development Program is the strategic vision of efforts to overcome the effects and poverty caused by Mitch. Conceptually, it is a process to generate the capacity at the municipal level and at the community to promote the economic, social and political growth of the population. This development is understood as a self-sustained, progressive and equitable process that also has aspects of gender and environment, based on the participation of local residents."

Lack of Municipal Capacity. In reality, two years later when the recent earthquakes struck, only a handful of the country's 262 municipal governments had any professionally trained staff. One of the major problems identified and addressed by some NGOs in El Salvador is the lack of municipal capacity for planning; programming; budgeting; project management; negotiation with the companies that are lined up to become private suppliers of water, energy, road works, etc.; and lack of capacity for litigation.

Legal capacity is very important. One of the reasons why there has been so much confusion and delay in replacing the thousands of homes destroyed is that municipalities cannot find land for permanent, secure, and healthy house sites. This is also the reason why so much donor effort has gone into "temporary" housing, in sites that will become unsanitary when the rains begin in May. The most common "temporary" house type is a small box made of corrugated

aluminum (lamina) for four walls and a roof. This arrangement creates an oven during the day and a cold environment at night. It provides little space for normal family functions, and, without latrines or drainage, densely bunched on scarce public land, is a recipe for further health and social disasters.

The national government's commitment to defend private property makes it favor this kind of ad hoc arrangement. Regrettably many foreign donors and NGOs have allowed themselves to forget 20 years of experience that teaches that such temporary housing is a very bad idea.⁸

The municipalities could use their powers of "eminent domain", condemning and expropriating land necessary for re-settlement (with negotiated compensation). The Municipal Code gives them these powers. However, most municipalities do not have lawyers familiar with this kind of law, nor have the courts seen many cases of this kind (the municipalities of greater San Salvador are an exception). Finally, the municipal lawyers, where they exist, may not have the skills to compete with private lawyers hired by property owners. This could be one of the reasons why the municipality of Santa Tecla failed to win its case against the developers whose new luxury home development in the Las Colinas area quite likely contributed to the deadly landslide triggered by the January 13th earthquake.

Deceptive and Partial National Programs. The government's strategy for reducing vulnerability through a "local development program" bears quoting at length at this point. Had the following approach actually been put in place, the losses due to the recent earthquakes are quite likely to have been less, and, certainly the municipalities would be in a much stronger position at the moment to address recovery as part of participatory, citizen-based, comprehensive development planning (GOES, 1999).

The primary objective is the development of a progressive process for the transference of power, competence, responsibilities and resources from the central government to local government in their role of politico-administrative units that form part of the national judicial system and also represents the communities' interests. The following are the specific objectives:

- *Create, strengthen and consolidate local processes for the improvement of the communities and municipal governments with the objective of promoting their own development, mainly in two areas:*
 - *organized and democratic participation of the civil society in processes of planning, formulation, execution and operation of communal and municipal projects and,*
 - *autonomy and capacity of management of the local development by the municipal governments by means of a process of decentralization.*
- *Provide the municipal and community infrastructure works aimed at the provision of social services and support of the economic development (education, water, health, rural roads, electrification, etc.).*

Since opposition parties are strong in many of the elected municipal councils, the ARENA-dominated national government simply does not wish to devolve power and capacity, although it makes the appropriate statements about decentralization to conform to donor preferences. In addition, with privatization of public works and water underway, to be followed by others, this kind of decentralization insures that private contractors (domestic and foreign) will win contracts. The central government knows that most municipalities have no capacity whatever to set up and to run their own utilities (water, power, etc.) or carry out road maintenance and other public works. Giving them the responsibility without adequate human and financial resources ensures that the work will be done by the private sector.

PRELIMINARY CONCLUSIONS

The majority of the Salvadoran population has been frozen out of participation in the planning of recovery. Despite some commendable efforts by local municipal governments and NGOs, little progress has been made in permanent rehousing or mitigation of the floods that are likely when the rainy season begins in mid-May. Privatization of the Ministry of Public Works' functions will only delay preparations for the rains and lead to a deterioration in an already poorly maintained infrastructure (hence make infrastructure more vulnerable to future earthquakes, floods, and

hurricanes).

On the positive side, various NGOs are actively working on innovative models of rehousing such as an excellent low-cost, reinforced adobe block model and are working at the national level to raise questions about the need for new legal instruments and comprehensive territorial planning. Yet disunity and competition among the many NGOs (numbering over 3,000) limits their effectiveness.

Focus group participants seemed united in support for at least four elements as a new approach to disaster risk reduction in El Salvador.

First, greater unity or at least coordination is needed among the institutions of civil society, and this includes NGOs. Competition for foreign NGO and other donor support has led to a lack of cooperation between local NGOs where similar social and bio-regional concerns, not to mention propinquity, would seem naturally to unite their efforts (e.g. on the left and right banks of the same major river!). Similarly, as of the end of March, 2001, there were dozens of competing designs for low cost replacement housing, not to mention three fundamentally different re-housing philosophies emphasizing temporary, transitional, and permanent resettlement.

Second, there needs to be a concerted campaign to reintroduce and pass a basic law on preparedness and prevention of disasters. A prerequisite for this is coordination, if not unity, in civil society and a large-scale, popular education campaign. Without the framework of law, there is no hope of improvements in disaster management at the national level. The present system of ad hoc decisions by central government, lack of transparency, and control of relief and foreign aid money by the ruling party will never result in a national system of preparedness, and certainly not to the links between sustainable livelihoods and ecologically sound land use that disaster mitigation and prevention require.

Third, a national dialogue is required concerning the nature and trajectory of "development" in El Salvador. What kind of economic, social, and environmental policies are required to prevent disasters? What is the relationship between poverty reduction and disaster reduction? How are disaster and democracy linked? Civil society and local NGOs must take the lead. They have already made efforts, such as the proposal of a comprehensive disaster prevention law after Hurricane Mitch and by forming the "Citizens' Declaration" on recovery from the recent earthquakes.

Fourth, the international solidarity network that existed during the civil war needs to be reactivated. At that time there were many groups actively monitoring the human rights situation, assisting political refugees, and lobbying with their governments for policies that would lead to peace with justice in El Salvador. Since the peace agreement in 1992, this network has become less active. However, pressure on the national government in El Salvador must come from outside as well as from within the country if the necessary reforms are going to happen. I have argued elsewhere that there is a human right to protection from avoidable harm in extreme natural events (Wisner, 2001).⁹ Thus, the same foreign groups that worked once in solidarity with the people of El Salvador could help to monitor the degree to which their own government policies and those of El Salvador provide protection from avoidable harm.

PRACTICAL ACTIONS AND BENEFITS

As a result of my visit, two representatives of greater San Salvador were invited to the EMI Americas cluster meeting in Quito, Ecuador, 9-13 June, 2001. They attended and presented information on the landslide in Santa Tecla and on the legal basis for comprehensive disaster risk reduction. San Salvador is considering joining in this cluster and exchanging information and expertise with the other member cities: Los Angeles, Quito, Bogota, and Mexico City.

A Salvadoran employee of the Heinrich Boell Foundation in San Salvador, Mr. Jose Chacon, was invited to participate in the 2001 Natural Hazards Research and Applications Workshop in Boulder, Colorado. He attended, with funding provided by the American Friends Service Committee and registration fee waiver from the Boulder Center, and participated in a panel on human rights and disasters.

FUTURE RESEARCH, PUBLICATION, AND ACTION

I plan to continue to return to El Salvador to work on landslide hazard mitigation; development of a model of transforming urban ravines into ecological parks (collaborating with PRISMA and UNES); and a detailed study of the linkage between sustainable livelihood security, ecologically friendly land use, and disaster mitigation in the lower Lempa river area, including Jiguilisco Bay and San Juan del Gozo Peninsula (collaborating with CBL and La Red).

I have a chapter in Spanish on the recent earthquakes already in press as part of a volume being produced by the Heinrich Boell Foundation in San Salvador. The RADIX web site and discussion list has been, and will continue to be, a major vehicle for disseminating my research results and analysis: <http://www.anglia/geography/radix>.

APPENDIX 1: INSTITUTIONS AND ORGANIZATIONS CONTACTED

1. San Salvador City Council
 2. Technical Executive, Greater San Salvador Council of Mayors
 3. National University of El Salvador
 4. University of Central America
 5. Oscar Romero University
 6. Coordinating Group for the Lower Lempa Valley (rural development NGO)
 7. Ecology Unit of El Salvador (environmental NGO)
 8. Equipo Maiz (popular education NGO)
 9. Heinrich Boell Foundation (development NGO)
 10. PRISMA Foundation (urban and territorial planning NGO)
 11. FUNDAMUNI (municipal capacity building NGO)
 12. CORDES (rural development NGO)
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APPENDIX 2: FOCUS GROUP PROTOCOL

1. How did the earthquakes affect your normal mission and activities?
 2. What role have your organization taken in recovery?
 3. How did prior disasters (e.g. Hurricane Mitch) affect vulnerability/ resilience to the earthquakes?
 4. What steps are being taken to prevent the earthquakes from indirectly causing future disasters (e.g. floods, more landslides)?
 5. How is the government's official recovery plan (for potential international donors) being put together?
 6. What efforts have been made to incorporate citizens' views in the government's recovery plan?
 7. What are the greatest risks in the daily lives of the common people of this country?
 8. What are the deeper, underlying causes of vulnerability to natural hazards in El Salvador?
 9. What changes in Salvadoran society would be required to reduce vulnerability to natural hazards? Might decentralization of economic and political decision-making and enhanced capacity of municipalities be seen as a part of these changes?
 10. Are there examples give of successes here in El Salvador in reducing vulnerability to some natural hazard?
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NOTES

1. At the moment, as in many Latin American countries, there coexists a public (social security) health care system and a private system of hospitals and clinics, as well as private health maintenance organizations with contracts with both private industry and groups of public employees.
2. Numerous manuals, sets of guidelines, and training courses have been provided over the years in the Latin American region by PAHO and by the PAHO/WHO Collaborating Center on Disaster Mitigation in Health Facilities at the University of Chile in Santiago. (For more information, contact rborosch@tamarugo.cec.uchile.cl.)
3. *Plan de Transferencias de Tierras* (PTT).
4. On the conceptual basis of such a new, comprehensive law, see Ibarra *et al.* 2000, and for the text of the draft "Law on Prevention and Mitigation of Disasters and Civil Protection", see UNES 2000.
5. For example, Equipo Maiz, mentioned above.

6. See the web site at <http://www.anglia.ac.uk/geography/radix/elsalvador3.html>
 7. "... bajo esquemas verdaderamente descentralizados, participativos y concertadores en el ámbito nacional, regional y local; con una perspectiva de equidad social, de género y sustentabilidad ambiental ..."
 8. Some international NGOs and local NGOs have rejected the "temporary" housing approach. They make the point that some of the houses that collapsed during the earthquakes were poorly built "temporary" shelters put up after Hurricane Mitch. For example, Oxfam America is partnering with the local NGO REDES to build concrete foundations and erect steel frames and roofing sufficient for 2,000 houses in San José; Via Nueva, near San Salvador. Another example is *Asociación Equipo Maiz*, a group devoted to popular education. They partnered with the National University, two other Salvadoran NGOs, and three foreign NGOs in researching and disseminating a model low cost, self-built reinforced adobe house that is resistant to seismic forces. Other NGOs are now involved in building demonstration houses using this model in several parts of the country.
 9. On the relationship between human rights and disasters, see the web site RADIX:
<http://www.anglia.ac.uk/geography/radix>.
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