

THE MARGINALIZATION
OF DISASTER RESPONSE INSTITUTIONS

THE 1997-1998 EL NIÑO EXPERIENCE
IN PERU, BOLIVIA, AND ECUADOR

Richard Stuart Olson

Juan Pablo Sarmiento Prieto

Robert A. Olson

Vincent T. Gawronski

Amelia Estrada

Natural Hazards Research and Applications Information Center
University of Colorado
Special Publication 36



Printed in the United States of America

Published 2000 by, and available from,
The Natural Hazards Research and Applications Information Center
Campus Box 482
University of Colorado
Boulder, CO 80309-0482
(303) 492-6819
Fax: (303) 492-2151
E-mail: hazctr@colorado.edu

Available in Spanish from
The Regional Disaster Information Center (CRID)
P. O. Box 3745-1000
San Jose, Costa Rica
Fax: (506) 231-5973
E-mail: crid@crid.or.cr

This publication is also available via the World Wide Web:
In English: <http://www.colorado.edu/hazards>
In Spanish: <http://www.crid.or.cr>

Reproduction and distribution with acknowledgment is permitted and encouraged.

TABLE OF CONTENTS

Acknowledgments and Editor's Note.....	4
Abstract.....	5
I Introduction.....	7
II Framing an Assessment	9
III Looking Back.....	13
IV The 1997-1998 ENSO: Summary of Impacts.....	15
V Governmental-Institutional Response to the 1997-1998 ENSO.....	21
VI Three Countries and the Disaster Marginalization of Civil Defense: Why?.....	33
VII Conclusion: Ready for the Next ENSO?.....	35
VIII Postscript: December 1999	37
References	41
The Authors	43

ACKNOWLEDGMENTS

The authors gratefully acknowledge support and assistance from the regional team office for Latin America and the Caribbean of the Office of U.S. Foreign Disaster Assistance, the International Hurricane Center at Florida International University, and the National Science Foundation. None of these organizations, however, bears any responsibility for statements of fact or interpretation in this report. That responsibility lies totally with the authors.

EDITOR'S NOTE

The ENSO-focused "institutional response" research reported in this special publication was carried out in 1997 and 1998 and originally drafted in mid-1998. With essentially the same focus, the research team was then reoriented to the Caribbean and Central America by Hurricane Georges and Hurricane Mitch in late 1998, which delayed publication of the ENSO research. The devastating mid-December 1999 floods in Venezuela, however, again highlighted institutional problems in mitigation, preparedness, and response in the Western Hemisphere.

The team's research report on Hurricane Georges and Hurricane Mitch and the institutional response problems in the Dominican Republic (Georges) and Honduras and Nicaragua (Mitch) will appear as a future special publication in this series.

ABSTRACT

The South American countries of Ecuador, Peru, and Bolivia have now experienced two major El Niño Southern Oscillation (ENSO) events in the past 17 years. The first was in 1982-1983. The recently concluded second was in 1997-1998. Briefly reviewing the lessons learned/not learned (mostly not learned) from the 1982-1983 ENSO, this study 1) focuses on the most recent ENSO's impacts and governmental-institutional response in Peru, Bolivia, and Ecuador, and 2) assesses likely institutional readiness for the *next* ENSO.

The principal finding is that while the civil defense organizations in the respective countries were the nominal "national emergency organizations" at the outset of the most recent ENSO, each was rapidly pushed to the sidelines ("marginalized") by one or more new but temporary governmental organizations charged with supposedly managing the response. The result was 1) confusion and duplication at the institutional level and 2) a serious loss of credibility and morale in each country's civil defense structure. This is hardly the combination one would seek for optimizing institutional readiness for the next ENSO.

Finally, but again hardly a surprise, in all cases the 1997-1998 ENSO became a major domestic media and political issue. In two of the countries, the most recent ENSO became part of either official (Ecuador) or unofficial (Peru) electoral campaigns. In the third case (Bolivia), it became enmeshed in inter-party coalition politics.

I

INTRODUCTION

This study seeks to answer a deceptively simple question: Based on their 1997-1998, and to a degree their 1982-1983, experiences with El Niño (or more properly El Niño Southern Oscillation, ENSO), will the governments of Ecuador, Peru, and Bolivia be institutionally better prepared to deal with the *next* major ENSO? If the answer is yes, then we want to know how and to what degree. If the answer is no, then we very much need to know why not. Either way, policy and program implications must be spelled out, especially for disaster mitigation and preparedness in the current “inter-ENSO” period. In fact, it would well serve the governments involved, as well as the donor and disaster research communities, to remember that every non-ENSO period is actually an inter-ENSO period.

The structure of this study is as follows: After framing the background and then dealing with the lessons learned/not learned from the 1982-1983 ENSO, we focus on what happened in the three Andean countries between roughly June 1997 and the end of August 1998—and why. The final section discusses policy and program implications, and a post-script brings the analysis to December 1999. Two major findings, however, should be noted at the outset; multiple field visits to the three countries between 1997 and 1999 revealed an interesting pair of commonalities:

- 1) It took international news media reporting to stimulate/convince the governments of Ecuador, Peru, and Bolivia to attend to the implications of the developing 1997-1998 ENSO. That is, it took “bounce back” foreign coverage to put the ENSO threat on the domestic policy agendas in the three countries and

to induce the governments to pay more attention to their own scientific communities.

- 2) As 1997-1998 ENSO impacts deepened in all three countries, each government set up new response organizations and structures—in some cases several in sequence—that sidelined and effectively demoralized the organization (in all three cases, the national civil defense office) previously and supposedly charged with disaster response. Several reasons were adduced for the marginalization of civil defense in the three countries, both for and off the record, and they are discussed in greater depth below. Nonetheless, despite differences in detail, the overall governmental-institutional response pattern in the three countries was consistent, clear, and striking.

It will hardly come as a surprise, but the various governmental responses to the 1997-1998 ENSO were influenced and complicated by a host of socioeconomic and, especially, political factors. In two cases, the 1997-1998 ENSO became part of electoral campaigns, one official (Ecuador), the other unofficial (Peru). In the third case (Bolivia), ENSO impacts and responses were influenced by a transition of administrations and a certain amount of political maneuvering common to coalition governments where ministries are divided among various political parties and factions. Therefore, two assumptions underlying this analysis should be made explicit at the outset:

- 1) Institutional readiness to deal with disaster on the part of any government is not primarily a technical or administrative issue. Rather, it is a political and policy decision be-

cause it authoritatively allocates scarce resources (personnel, budget, access, public profile) among competing agencies, priorities, and values.

2) Disasters themselves are innately political events because they place enormous demand and decision-making stresses on governments that rather suddenly find themselves in situations of fluctuating resources. Some resources are lost in disaster events, but others

are freed up or derive from external donors, which generates both cooperation and conflict a) within host governments, b) between host and donor governments, and c) among host governments, nongovernmental organizations (NGOs), international organizations, and the private sector. The types and levels of cooperation and conflict are determined by disaster needs and the socioeconomic and political context of the country at the time of impact.

II

FRAMING AN ASSESSMENT

El Niño Southern Oscillation Events as Disasters

The weather phenomenon known as “El Niño” (ENSO) is certainly not new (Spanish explorers reported the occurrence in 1525-1526), but after wreaking its destruction relatively quietly for hundreds of years, it has become suddenly famous in the last few years. Indeed, during the latter months of 1997 and especially in the first quarter of 1998, it was difficult to find a U.S. news network that did *not* have an ENSO report or even a feature article five to six times a week. “El Niño” became a household word in much of the Western Hemisphere. Of course, the populations of nations (especially Ecuador, Peru, and Bolivia) that have historically borne the more noticeable brunt of significant ENSOs had been very familiar with the event for decades—but not explicitly as a problem for public policy.

Deceptively mild sounding, an ENSO comprises the appearance of unusually warm sea surface water in the central and eastern Pacific Ocean near the equator. ENSOs can range from very weak (1-2 degrees centigrade above normal) to very strong (7 or more degrees centigrade above normal). An ENSO occurs every half decade or so, but most are weak to moderate (sea surface water 2-3 degrees centigrade above normal) and have only local effects. A major ENSO, however, changes weather patterns globally and creates “anomalies” (storms, floods, droughts) not only in the Americas (including the Andean countries and Brazil, Paraguay, and Argentina) but also, through atmospheric “teleconnections,” in Africa, Asia, and even Australia (see Glantz, 1996, for a full treatment).

The only certain silver lining to an ENSO is that it dampens the Atlantic hurricane season, but ENSO impacts in some countries also appear to affect world commodity markets and therefore benefit specific economic sectors in other countries. Finally, some agricultural sectors (e.g., prawn production in Ecuador) benefit from ENSO-induced weather changes, as does the construction industry in affected countries, especially during reconstruction. Nonetheless, all other ENSO effects are invariably negative and qualify major ENSOs as “disasters.” For our purposes, conceptualizing ENSO events as disasters allows them to be analyzed in a particularly useful way.

Extending Fritz’s classic (1961) definition, Kreps (1989, p. 219) has defined disasters as

nonroutine events in which societies or their larger subsystems (e.g., regions, communities) are socially disrupted *and* physically harmed. The key defining characteristics of such events are 1) length of forewarning, 2) magnitude of impact, 3) scope of impact, and 4) duration of impact. [original emphasis]

As noted above, until media attention to their truly global impacts really took hold in 1997-1998, ENSOs were relatively unknown except by 1) atmospheric and related field scientists, and 2) the populations of the most dramatically and immediately affected nations, especially the Andean countries. The rest of the world remained largely ignorant of the nature and global reach of ENSOs. Indeed, in the only book-length and “user-friendly” treatment of the phenomenon, Glantz (1996, p. 2) points out

quite emphatically that the underlying purpose and theme for his book is that, given that ENSOs are globally important, “we, as members of different societies, need to have more than passing, intermittent interest in it, limited for the most part to when it occurs every few years or so.”

Taking the Kreps definition of disaster and combining it with what we know about ENSOs in general, we can state with confidence that 1) although appearing periodically and with relative predictability, ENSOs are “nonroutine” because they vary tremendously across time, and 2) historically, very strong ENSOs have been enormously destructive. For analyzing ENSOs, however, the more interesting aspects of the Kreps definition of disaster lie in the four, more specific, “defining characteristics” of disaster: *length of forewarning*, *magnitude of impact*, *scope of impact*, and *duration of impact*.

Length of Forewarning

Various monitoring technologies now provide literally months (often up to six months) of notice that an ENSO is building. In that sense, ENSOs are slow-onset disasters, and we generally know the regions of greatest impact. The problem is that scientists necessarily work at a level of abstraction, but people in potentially affected areas have more concrete concerns, as Betsill, Glantz, and Crandall (1997, p. 7) point out:

While scientists have been most concerned with determining the probability of an ENSO event, people living in the affected area are far more interested in knowing that such an event has actually begun. It is this information, not necessarily a statistically valid forecast based on probabilities, that will encourage them to prepare for the likely consequences.

A general forewarning is the easy part because, as noted above, ENSOs actually occur on average every four to five years with a range of between two and ten years. Major events occur on average every five to seven years. For practical and policymaking purposes and recalling the Kreps definition, therefore, it is ENSO *variance* along the dimensions of magnitude, scope, and duration that is important.

Magnitude of Impact

A major (strong to very strong) ENSO event produces severe weather anomalies whose costs are ecological (often affecting entire species), human, and economic. Countries dependent on agriculture and/or fisheries (prime examples are Ecuador, Peru, and Bolivia) are especially vulnerable to ENSOs, as Golnaraghi and Kaul (1995, p. 16) note in their treatment of the phenomenon:

Societies whose wealth is derived primarily from agricultural and hydrological resources are particularly vulnerable to dramatic inter-annual climate disruptions.

The significant problem, of course, is that population and economic growth in many countries has placed increasing numbers of people and investment in vulnerable areas, essentially in harm’s way, so the magnitudes of ENSO impacts are increasing. While national economies at the aggregate level are in some ways now better able to absorb ENSO losses (due to higher levels of development compared to 10-15 years ago), it is a fact that economic development has been highly uneven, and traditionally disadvantaged parts of the population are, in fact, worse off. Indeed, it is now almost a cliché to say that “no one eats the GDP [Gross Domestic Product], just their share,” and the problem is exacerbated by the fact that most nation states, especially in the Third World, have drastically reduced social spending in the last decade. Whatever safety nets that may have existed are now pretty much gone.

Therefore, because 1) economic development has been highly skewed and favorable to only certain parts of the population, 2) state capabilities have been reduced, 3) population and urbanization have increased, and 4) hazard mitigation has not been high on the public policy agendas of most countries, ENSO events of the same size are potentially more destructive—in absolute terms—than they were a century ago.

Scope of Impact

An ENSO’s scope of impact must be understood in two senses—geographic and sectoral. Geographically, the impact area for a significant ENSO event is huge. While most attention is focused on the impact areas of the

eastern Pacific (especially the west coast of South America and, increasingly, the United States), the atmospheric teleconnections of a strong to very strong ENSO extend its impacts globally. Again, the problem is level of abstraction. The scientific community tends to focus on regional impacts, but it is the specific local effects that can be so devastating—and local effects are much less predictable from one ENSO to another. For example, a valley unscathed in one ENSO might experience severe flooding in the next, a decade later.

Sectorally, ENSOs can have devastating impacts on agriculture, fisheries, transportation, finance, housing, and a host of other areas. Indeed, in Andean countries experiencing a major ENSO event, it is difficult to find an economic sector that is *not* affected to one degree or another.

In sum, it is possible to argue that ENSOs are so complex that they really should not be defined as “events.” It is probably more correct to say that major ENSOs are temporary climatic conditions that create a multiplicity of local effects that extend, however, in some cases over entire nations. Moreover, because of their varied and multiple effects, ENSOs reveal

and deepen weaknesses in economies, societies, and governments. With governmental structures especially, and at the risk of anthropomorphism, ENSOs seem almost to home in on the interstices between national, provincial, and local governments (exposing and exacerbating vertical coordination problems) and between ministries and offices at the national level (exposing and exacerbating horizontal coordination problems).

Duration of Impact

ENSOs build, peak, and decline over many months, and they bridge calendar years, so their duration of impact is often discussed in two-year cycles, especially when they are strong to very strong (e.g., 1972-1973, 1982-1983, 1997-1998). The problem with identifying them in that fashion, however, is a tendency to underestimate the fact that ENSO impacts can be very long lasting. Infrastructure damage in Peru, for example, may actually run from one strong ENSO event through several smaller ones. The same could be said of ENSO-induced drought in the high valleys of Bolivia, where it may take several years for agriculture to recover.

III

LOOKING BACK

Three 1997-1998 Event Observations

Three aspects of the most recent ENSO are particularly noteworthy.

First, lost in the media blitz accorded the 1997-1998 ENSO is the fact that the 1982-1983 event was thought to have been “the ENSO of the century.” Cumulative losses were estimated at \$13 billion. The 1997-1998 ENSO’s impact magnitude, scope, and duration, however, at least rival the 1982-1983 event. Thus we have seen two “ENSOs of the century” within 15 years, which gives pause for thought, especially if the scientific community is able to establish an ENSO connection with global warming and climate change. At the very least, however, we can say that ENSOs constitute a permanently recurring risk to the Andean countries in particular.

Second, because of the wide scope of ENSO impacts, especially sectoral impacts, mitigating an ENSO requires an inclusive and highly coordinated approach involving multiple government agencies, the private sector, and national and international intergovernmental and nongovernmental organizations (NGO coordination is an entirely separate issue; see

McEntire [1998] on Peru). That is, managing ENSOs requires the same approach (ideally) as managing development in general. While economic growth/prosperity may ameliorate ENSO impacts, or at least facilitate recovery at the aggregate level, only a highly coordinated international, governmental, and civil society approach will provide some protection for the poorest and most vulnerable of a nation’s population.

Third, and most importantly, because of their recurrent, if somewhat unpredictable, nature and the increasing length of forewarning provided by new technologies, *ENSOs are prime candidates for systematic mitigation*. After all, compared to major earthquakes, which often have recurrence intervals measured in hundreds of years, major ENSOs recur every decade or so. While that still exceeds the life expectancy of most governments, a typical adult might expect to see three or four major ENSOs during his/her lifetime and will probably experience at least some ENSO impacts. Therefore it bears repeating that, at least for the Andean countries, time is either “ENSO” or “inter-ENSO.”

The 1982-1983 Event: Inter-ENSO Learning?

It would be reassuring to say that significant policy and program learning took place since the 1982-1983 ENSO. Unfortunately, that was not the case for host governments in the Andean countries, external donor governments, or international organizations. With very few exceptions—and those mostly at the local level—infrastructure and economic assets lost

in the 1982-1983 ENSO were simply repaired or replaced *in situ*, without serious thought given to mitigating future ENSOs. As one donor organization official noted in a 1998 interview with us, “It was a flat learning curve. Reconstruction from the 1982-1983 event was just replication.”

Institutional development and capability to deal with disasters in the three Andean countries also showed no serious learning from the 1982-1983 ENSO. While civil defense organizations and systems were strengthened a tiny bit, they were given no mitigation mandates. That is, they were starved for resources and remained low-profile response systems with virtually zero pre-event coordinating or policy influencing capabilities.

The greatest learning from the 1982-1983 ENSO occurred in the scientific communities, but more in Peru than in either Ecuador or Bolivia. Referring to Peru, Golnaraghi and Kaul (1995, p. 41) noted:

The estimated loss of \$2 billion in damages to agriculture, industry, transportation, and other economic sectors during the 1982-1983 event led the government to set up a network incorporating scientific expertise into the policy process.

Field observations during the 1997-1998 ENSO, however, revealed a somewhat different picture, where the lack of permanent institutional channels (and scientific disagreements in early 1997) retarded the flow of information to key ministries and the presidency. One critic noted that "they [the government of Peru] only listened to part of what we were saying," which may explain one of the most striking 1997-1998 ENSO problems in Peru: a governmental misreading of the appropriate prior experience.

President Alberto Fujimori and his government were conspicuously active in mid-to late 1997, engaging in a variety of physical

mitigation activities (e.g., clearing channels, repairing dikes). Unfortunately, they were assuming that the developing 1997-1998 ENSO would be a repeat of 1982-1983, whereas in fact it turned out to be most similar to the 1925-1926 event. The result was that much of the mitigation activity was misplaced. Not misplaced, however, were the political motivations, as *The Economist* (May 9, 1998, p. 38) observed:

The true artist of El Niño has been Peru's President Alberto Fujimori. His government spent \$300m in advance (not all in the right places, but at least the ones that looked right at the time); and El Niño struck as he rushed about frenetically taking personal charge of relief efforts, even rescue attempts. Too frenetically, say some critics, who claim presidential efforts are muddling those of people on the spot. Maybe, maybe not; but his poll ratings, 30% in mid-1997, now stand at 45%.

The larger lesson, as noted previously, is that while ENSOs are regional to global phenomena, *it is their specific local effects that are so problematic, and these local effects 1) vary tremendously from ENSO to ENSO, 2) are difficult to predict except in the very short-term (hours to a day or two), and 3) constitute the actual disasters/catastrophes associated with ENSO events.* Therefore, ENSO mitigation in the Andean countries must be long-term, national in scope, and historically informed by the scientific community. To put it bluntly, countries that regularly experience significant ENSO impacts should *always* be systematically readying themselves (mitigating and preparing) for the next event.

IV

THE 1997-1998 ENSO: SUMMARY OF IMPACTS

Ecuador

Ecuador was the only country that requested a damage assessment from the U.N. Economic Commission on Latin America and the Caribbean (ECLAC), known in Latin America by its Spanish acronym CEPAL (*Comisión Económica para América Latina y el Caribe*). The CEPAL team visited Ecuador for three weeks in June 1998 and compiled a detailed (68-page) report that was delivered to the govern-

ment of Ecuador in mid-July. Using a CEPAL methodology employed in other disasters, the team estimated the economic losses associated with the 1997-1998 ENSO at nearly US\$3 billion (\$2,869 million). Of that total, 27% (\$783 million) were considered direct damages and 73% (\$2,086 million) indirect. In more detail the CEPAL team reported (1998, p. 44) the numbers below:

<i>CEPAL Estimated Economic Losses for the 1997-1998 ENSO</i>	
<i>(US\$ millions)</i>	
Capital	\$281
Production	\$1,421
Increased Service Costs	\$836
Emergency Response Expenditures	\$331

Given an admitted inability to calculate losses to the environment, the CEPAL team simply noted that were such losses to be included, “the figures would go higher.”

Aggregate economic losses are an incomplete (and rather cold) way to capture disaster impacts, a point not lost on the CEPAL team. The CEPAL report noted that seven million people—60% of the population of Ecuador—were affected in one way or another by the 1997-1998 ENSO but that the primary impacts were in the coastal and southern provinces of the country. While the numbers of killed (286), injured (162), and missing (36) were not large, the major problem was the number of families permanently or temporarily homeless

due to riverine and coastal flooding. Combining the two categories, CEPAL reported more than 18,000 families (nearly 90,000 people) homeless at one time or another during the 1997-1998 ENSO. Of that number, more than 6,000 families (29,000 people) lost their homes completely.

As is common in disasters, the poor, especially owners of small farms and day laborers in the southern and coastal rural areas, suffered the greatest losses. The CEPAL team noted that many males from these groups were migrating to the cities, leaving female heads of household alone in disaster zones, in economically precarious and unsanitary conditions. The CEPAL report offered the following general assessment:

El Niño has generated a migratory wave of vast consequences. Thousands of families have been displaced by the destruction of homes, loss of crops, loss of work, or to seek protection in shelters. In Guayaquil alone, 18 square kilometers . . . have been occupied [by homeless from the affected region] . . . These are families who lost or abandoned in the majority of cases very humble dwellings and now look for something as humble— or even poorer. [CEPAL, 1998, p. 21]

Field observations corroborated this point, as does an assessment by the special “Intelligence Unit” of *The Economist*, which releases quarterly country reports published in country series format as *The Economist Intelligence Unit [EIU] Reports*. The second quarter 1998 Ecuador report tied together the country’s chronic unemployment problems and the more specific impacts of the 1997-1998 ENSO:

Unemployment and underemployment are likely to have increased during the remainder of 1997 and in early 1998. Since the end of 1997 El Niño accelerated emigration from the countryside to cities has aggravated unemployment and underemployment. [EIU (Ecuador), 1998, Second Quarter, p. 17]

In terms of infrastructure, the CEPAL report identified the greatest losses in water systems, sewage treatment, communications, and transport, especially roads. The education infrastructure also suffered damage, as some schools were lost to flooding and many others had been used as emergency shelters for dozens to hundreds of families.

Until the delivery of the CEPAL study, the government of Ecuador loss estimates were generally lower, but in June 1998, the vice president of Ecuador reported figures in a meeting with the World Bank in Washington that closely approximated those of the CEPAL team. Total losses were estimated at US\$2.5 billion. By categories, “Roads and Bridges” constituted US\$1 billion of the damage. “Housing” losses were estimated at US\$23 million. For “Schools” the estimate was US\$15 million. The most impacted sector, “Agriculture,” accounted for US\$1.5 billion.

In this latter sector, heavy rains hit hard the provinces of El Oro, Guayas, and Los Rios, where agricultural production is concentrated.

The rains destroyed banana, coffee, cocoa, and rice crops. As early as the fourth quarter 1997 Ecuador report, the EIU expected (p. 8) “GDP growth in the second half of 1997 to be well below that of the first half and growth of 3% is forecast for this year as a whole.” Moreover (p. 7), “Higher prices of imports in domestic currency will feed inflation pressure already created by fiscal imbalance and scarcity of basic food as a result of El Niño.” In its second quarter 1998 report, the EIU estimated:

The government’s target of 30% inflation for 1998 is likely to be missed by a wide margin. Accumulated inflation between January and April 1998 was 15.6% and year-on-year inflation was 33.4% in April. Shortages caused by El Niño were a major cause of inflation, pushing up food prices, which have a 32.1% weight in the consumer basket. Food prices increased by 15% during January-April, bringing year-on-year inflation for that category in April to 43.5%. [EIU (Ecuador), 1998, Second Quarter, p. 16]

Interestingly, in late 1997 in its fourth quarter report, the EIU was guardedly optimistic about one of Ecuador’s principal agricultural exports:

Ecuador’s banana production has so far been unaffected by the changes associated with El Niño. Local experts believe that banana production will remain unaffected for the duration of the climatic changes if the excess rainfall continues to be concentrated in the northern coastal region, away from the main banana-producing areas such as El Oro. As a safeguard measure formulated following the 1982/83 El Niño producers have built and maintained drainage channels and containing walls to prevent the flooding of plantations. [EIU (Ecuador), 1997, Fourth Quarter, p. 18]

As noted above, however, luck did not hold and the *bananero* mitigation works proved inadequate when the rains moved south. The EIU reported export revenues falling by 5% in the first quarter of 1998, compared to the same period a year earlier. Heavy rains and humidity also caused the resurgence of the Sigatoka Negra fungus that, together with weather damage, destroyed an estimated 6 to 12% of the banana crop (EIU [Ecuador], 1998, Second Quarter, p. 20).

Peru

Peru has long been adversely affected by ENSOs, and the 1982-1983 ENSO contracted Peru's GDP by over 10% (the estimated losses were US\$2 billion caused by heavy rains on the northern coast and drought in the southern highlands). Despite the significance of past ENSO impacts, the government of Peru did not request a CEPAL, or for that matter any other external, evaluation of 1997-1998 ENSO damage. Indeed, the entire topic became quite sensitive. On January 9, 1998, the government's *Presidencia del Consejo de Ministros* (PCM, Office of the President of the Council of Ministers—i.e., the prime minister) removed control of disaster information from the *Instituto Nacional de Defensa Civil* (INDECI, the National Civil Defense Institute). Then, rather than continuing to provide damage statistics, the PCM began reporting government response activities—not the same thing at all. Over time this led to some conflict between the national government and various NGOs as to the severity of ENSO impacts.

Similar to Ecuador, Peru's primary problems from the 1997-1998 ENSO were coastal storms and riverine flooding, especially in the areas around the northern cities of Piura and Tumbes and the mid-south city of Ica. A preliminary (June 1998) government damage census by the *Instituto Nacional de Estadística e Información* (INEI, National Institute of Statistics and Information) reported 529,000 people "affected" by the 1997-1998 ENSO (396,000 urban, 133,000 rural). The INEI report also listed nearly 31,000 homes destroyed or otherwise uninhabitable and another 32,000 partially destroyed. INEI's figures for infrastructure and economic losses were hotly contested by several government ministries, but damage to roads and bridges was at least the US\$120 million announced for reconstruction. Fisheries were showing at least a 20% drop in production from the previous year, but it should be noted that fisheries and fishmeal only account for 1% of Peru's GDP.

Agriculture, however, accounts for approximately 12% of Peru's GDP, and that sector began experiencing ENSO effects as early as August 1997. While the minister of agriculture maintained as late as June 1998 that

agricultural growth would hit 5% for the year, most private-sector groups estimated only a 2% gain. Perishable products were a particular concern. Various private-sector groups cited a 33% drop in fruit and a 9% drop in vegetables reaching market in the first four months of 1998, compared to the same period of 1997. For the first half of 1998, the EIU reported that agricultural production had shrunk by almost 4% year-on-year and that huge cultivation areas had been destroyed:

Some 17,000 ha [hectares] of crops, representing 1.4% of the total national area under cultivation, have been lost because of rains and flooding from El Niño, according to the Congressional Agricultural Commission. The areas most affected by El Niño are Tumbes in the north and Ica in the south. The commission president, Carlos Blanco, has explained that in the 1997 planting season, an additional 25,000 ha were planted nationwide, which should help to compensate for crop losses. [EIU (Peru), 1998, Second Quarter, p. 23]

In early March 1998, President Fujimori even called on the Peruvian navy to transport fruits and vegetables from northern Peru to the area around Lima. Heavy rains and landslides had made overland transportation impossible or exorbitantly costly. The EIU stated that "the products were distributed to the wholesale market in a bid to prevent a rapid surge in food prices which would have fuelled consumer price inflation" (EIU [Peru], 1998, Second Quarter, p. 23).

NGOs in Peru consistently reported higher loss figures than the government for the 1997-1998 ENSO (and had noted the effects much earlier as well). The Centre for the Study and Prevention of Disaster (PREDES, an NGO with considerable field experience and contacts) estimated ENSO losses as 374 people killed, 412 injured, 35,669 homes destroyed, 74,000 homes damaged, and a total affected population of nearly 600,000. CARITAS (the Catholic relief agency) reported 40,549 homes destroyed and another 36,699 seriously damaged.

PREDES estimated the total cost of ENSO damage at US\$1.8 billion—considerably higher than the government of Peru's recon-

struction estimate of US\$620 million. The discrepancy is largely due to the government's almost exclusive focus on infrastructure projects, versus the various NGOs' concern that small farmers, artisans, and the poor (which the NGOs argued were disproportionately hard hit by the 1997-1998 ENSO), were ignored in the accounting and left out of the reconstruction financing plans.

Summarizing prospects for 1998 in its second quarter 1998 report (p. 8), the EIU could find only spotty positive aspects:

Economic prospects for 1998 indicate a mediocre year by recent historical standards. El Niño and the Asian crisis are likely to depress growth to around 4% this year and raise inflation to just under 10% by the close of the year. There are signs that El Niño is starting to subside but its overall impact on the economy is still difficult to predict. The government has estimated the total cost of the damages caused by El Niño at more than \$600m, and the destruction of the infrastructure will certainly stifle production in agriculture. However, in terms of income flows other sectors, notably construction, will benefit as the repair efforts continue.

Bolivia

Because it is landlocked and very poor (the lowest per capita income in South America), Bolivia experiences ENSOs somewhat differently than do Ecuador and Peru. While Bolivia also incurred some unexpected rains and flooding, the country's major problem was drought in the Andean high valleys, where the reduced precipitation primarily affected the economically weakest part of the indigenous population, the poorest of the poor of a poor country, as well as one of their staple crops, potatoes.

As in Ecuador and Peru, the government of Bolivia was hesitant to officially recognize the full extent of the disaster. Indeed, it was USAID-Bolivia and its mission field investigations that by February 1998 identified drought and falling agricultural production (and possible famine) in the high valleys as the real problem posed by the 1997-1998 ENSO. Until then, public, national government, and international attention was focused on rain in the lowlands and some local flooding, which was in fact not unusual.

Drought and drought effects on agriculture are not as photogenic as violent storms, mudslides (*maicos*), and floods. Hunger is invisible until it reaches the famine stage, and by then it is often too late for most victims. As a result, ENSO effects in Bolivia were not as obvious as in either Ecuador or, especially, Peru. In addition, the government of Bolivia downplayed the impact of the 1997-1998 ENSO on food production, saying as late as March 1998 that crop losses were only the equivalent of US\$131 mil-

lion and production was off no more than 40% for potatoes, corn, barley, quinoa, and wheat. In contrast, USAID-Bolivia estimated crop losses "in the US\$200 million range" and production down astoundingly "over 60%." To be fair, several Bolivian officials understood that ENSO effects were more severe than they would admit publicly, but they held to their lower estimates in an attempt to, as one official explained, "limit price speculation in food-stuffs." The problem was, of course, that holding to the underestimation also undercut the sense of urgency and retarded response planning.

In agriculturally based economies such as Bolivia's (16% of the GDP is agriculture), adverse effects on food production and distribution tend to quickly drive up inflation. In its fourth quarter 1997 Bolivia report (pp. 16-17), the EIU credited the government of Bolivia with keeping the lid on inflation but also noted that ENSO effects were catching the poor in a particular, very cruel economic vise:

Prices have been held down by the authorities' tight monetary policy and the firm exchange rate. There may also have been some downward pressure on meat prices as farmers slaughtered stock in anticipation of difficulties brought on by the El Niño climatic phenomenon, which will reach its peak at the end of the year. With agricultural production expected to be affected by the unusual weather patterns, there may be a temporary increase in consumer prices of as much as 3 percentage points in the first half of 1998. A study by the Unidad de Análisis de la Política

Social (UDAPSO, the Social Policy Analysis Unit) concludes that the increase in the prices of staple foods in the first half of 1998 as a result of El Niño will have a regressive effect on income distribution, as the cost of living of the poor will rise more sharply than that of consumers with more diversified consumption.

The situation deteriorated as Bolivia moved into 1998 and ENSO effects became more pronounced—or at least more visible. In its first quarter report for 1998 (p. 16), the EIU summarized ENSO's estimated impacts on legal (i.e., excluding coca) agriculture:

The El Niño phenomenon has been blamed for severe drought in western parts of the country and serious flood damage in the eastern lowlands during the second half of last year. A report on Oruro province released in January found severe drought in six eastern provinces of the department. By exhausting supplies of both drinking water for livestock and irrigation water, the drought in Oruro is estimated to have damaged 20% of the agricultural crops planted and 30% of the livestock herd. Meanwhile the Cámara Agropecuaria de Oriente (CAO, Eastern Agricultural Chamber) estimated that El Niño had caused at least \$17m worth of losses to the maize crop in the eastern lowland area around Santa Cruz. Flooding has made 60,000 ha [hectares] uncultivable, representing over one-half of the 110,000 ha originally planned for cultivation. As a result, output for the season is not expected to exceed 200,000 tonnes, less than half of domestic demand. Soya, rice, sugar and cotton crops have also been badly affected, according to the CAO. Torrential rains and flooding between October and December 1997—attributed to El Niño—have also caused serious damage to the fruit-growing sector in Tarija.

Economic losses of such magnitude quickly become social catastrophes in Bolivia, and field investigations confirmed that the vast majority of the victims were the poorest of the poor in the highlands, whose standard of living was abysmally low before the onset of the 1997-1998 ENSO. By early 1998, NGO workers were reporting families dividing and increased migration from the western highlands 1) to the cities of Cochabamba, Santa Cruz, and La Paz, and 2) more troubling, to the coca-growing

region of Chapare (this migration was confirmed by the EIU in its second quarter 1998 report for Bolivia).

Drawing from the local press and government estimates for its second quarter 1998 report, the EIU offered the following analysis:

The government estimated in mid-April that over 40% of the population of some provinces will require emergency assistance to help cope with El Niño-related losses. The government has not specified the nature of the losses, which appear to cover a wide range—and degree—of problems including illness, damage to dwellings and crop destruction. Attending to those affected will be a priority in the coming months in order to prevent a wider social dislocation as a result of El Niño. The government has noted a sharp drop in school attendance in these areas as families cope with illness and clearing up the material damage of recent severe weather. According to government estimates, the worst-affected areas were Oruro, Chuquisaca and Potosí.

Explaining the need for donor coordination and a food security program in the high valleys, a May 1998 internal USAID report captured the overall situation both clearly and succinctly:

The peasant farmers in the highlands and high valleys, the most impoverished people in South America, have become poorer because of the drought. They are consuming whatever food surpluses they have available from the previous year's production and are selling part of their livestock, usually their only capital asset. Migration to Santa Cruz, other urban centers, the Chapare, and neighboring countries is on the rise, reaching 50 percent of persons, both men and women, between 15 and 30 years old.

Bolivia makes it even clearer than do Ecuador or Peru that the fundamental problem with ENSOs is not solely their aggregate economic impact. As national economies develop, they are better able to absorb losses and make compensatory adjustments. Aggregate ENSO losses in the 1997-1998 event in the three Andean countries were probably not as devastating as those in 1982-1983, when the economies were smaller and much less resilient. The problem with future ENSOs will increasingly revolve around *how the periodic losses (and gains) are distributed among social groups/classes*. Essentially a

moral issue, this point is hauntingly familiar. One only has to return to the work of Cuny (1983) on disasters and (uneven) development and, more recently, Albala-Bertrand (1993) on

disasters and differential social group “entitlements” to the basic necessities of life to see the problem.

V

GOVERNMENTAL-INSTITUTIONAL RESPONSE TO THE 1997-1998 ENSO

The Unit of Analysis

Methodologist Robert Yin (1994) once noted that the most serious problem with case studies is their tendency to get caught up in the storytelling and lose their focus—to wander analytically. His suggested solution was to constantly remind oneself of the original *unit of analysis* and thereby maintain its centrality. For

our purposes here, given how complex and fascinating ENSOs are, that advice is especially relevant. Our unit of analysis in this three-case comparative study remains civil defense in the three Andean countries and the role(s) it played—and did not play—in the 1997-1998 ENSO event.

Up/Down, In/Out: Civil Defense in the Three Countries

Ecuador

Literally on the first text pages of its damage assessment report for Ecuador, the CEPAL team profiled the context of the 1997-1998 ENSO, which was highly problematic economically *and* politically:

Ecuador is confronting adverse internal and external situations that complicate the possibility of easily overcoming [ENSO] damages. Externally, the significant drop in the price of oil has cut export earnings and government revenue to the point that even budgeted expenditures cannot be met. Internally, a change in leadership of the national government has created natural uncertainty and held up any systematic and vigorous rehabilitation and reconstruction efforts. [CEPAL, 1998, pp. 3-4]

The CEPAL report was actually quite understated. Suffering an annual inflation rate of approximately 30%, Ecuador was also in debt payment arrears to the Club of Paris. Economic austerity reforms attempted in 1996 soon led to a social and political crisis, and in February

1997, the Ecuadorean Congress impeached and dismissed President Abdalá Bucaram (whose erratic personal behavior contributed to his problems). The Congress then named an interim president, Fabián Alarcón, to finish the term (18 months)—which meant that the developing ENSO occurred with a weak, temporary president in a highly charged electoral environment. Even in early 1997 the major parties and candidates were gearing up for the June-July 1998 round of presidential elections. The timing guaranteed that ENSO would become a campaign issue, and indeed it did, especially because one of the final two candidates came from the coast (Guayaquil). According to close political observers, this candidate, Gustavo Noboa, advanced to the final round in part because he capitalized on “Quito’s” poor management of ENSO problems.*

* Authors’ note: Interestingly, Noboa lost the election but would be installed as president after a January 2000 coup d’etat.

More concretely, the extent to which a disaster becomes politicized is generally a function of the domestic media coverage it is afforded. We took a 13-month period (June 1, 1997, to July 31, 1998) and tracked the ENSO-related stories in Ecuador's two major dailies (*Última Hora*, *Hoy*), as shown in Table 1 and Figure 1. With more than 1,500 stories, the 1997-1998 ENSO presented clear opportunities for political maneuvering.

In truth, Ecuadorean electoral politics has historically lent little stability to the political system, and the words "effective government" and "Ecuador" have seldom been used in the same sentence. The government of Ecuador's administrative incoherence, however, was especially marked with the appearance of initial ENSO signs in mid-1997. Approved by the president of Ecuador, a closely held (40 copies only) *Plan Institucional* was developed to begin planning how to manage anticipated ENSO effects. Neither Ecuador Civil Defense nor any of the supposedly involved ministries, however, was able to secure a copy of the plan.

On July 2, 1997, the government of Ecuador declared a state of national emergency, charging Ecuador Civil Defense (*Dirección Nacional de Defensa Civil*, DNDC) with developing a contingency plan (*Plan de Contingencias Niño 1997*) to manage ENSO effects. Mandating the creation of a contingency plan obviously also meant that the government lacked a pre-existing ENSO plan, and it is always more difficult to devise a plan while you are simultaneously trying to organize response. The plan was to be developed with the cooperation of CONADE (*Consejo Nacional de Desarrollo*, the national development council), the planning and security offices of the various ministries, and other state organs.

At the end of September 1997, the (August) *Plan Institucional*, now also called the *Plan de Contingencias para Afrontar el Fenómeno del Niño*, was presented to the World Bank, the Inter-American Development Bank (IDB), and the *Corporación Andina de Fomento* (CAF, Andean Development Corporation, a regional international financial institution). It carried a budget of slightly more than US\$65 million, of which US\$6.4 million were to come from the government of Ecuador itself. This plan, however,

failed to indicate how the government portion would be sourced or financed.

A day earlier, however, and also approved by the Office of the President, another *Plan de Contingencias para Afrontar el Fenómeno del Niño* (the one prepared by Ecuador Civil Defense, CONADE, and other offices and ministries) was forwarded to the World Bank, IDB, and CAF. Highly general (it had categories of activities but lacked specific project information), this plan carried a budget of US\$290 million, to be financed by the three external international financial institutions.

Inexplicably, neither plan mentioned the other one, although both had been approved by the Office of the President.

In an apparent attempt to put some order into its ENSO planning, on October 13, 1997, the government created COPEFEN (*Unidad Coordinadora del Programa de Emergencia para Afrontar el Fenómeno El Niño*, the Coordinating Office for the El Niño Emergency). Based in the Office of the President, COPEFEN was to coordinate the implementation of all activities in the *Plan de Contingencias* (the second one, the first having disappeared). The problem was that Ecuador Civil Defense had no operational relationship to this new entity, and for its part COPEFEN had no operational capability of its own. Indeed, it was not until April 1998—six months after its creation—that COPEFEN was given the necessary legal and financial authority to carry out operations.

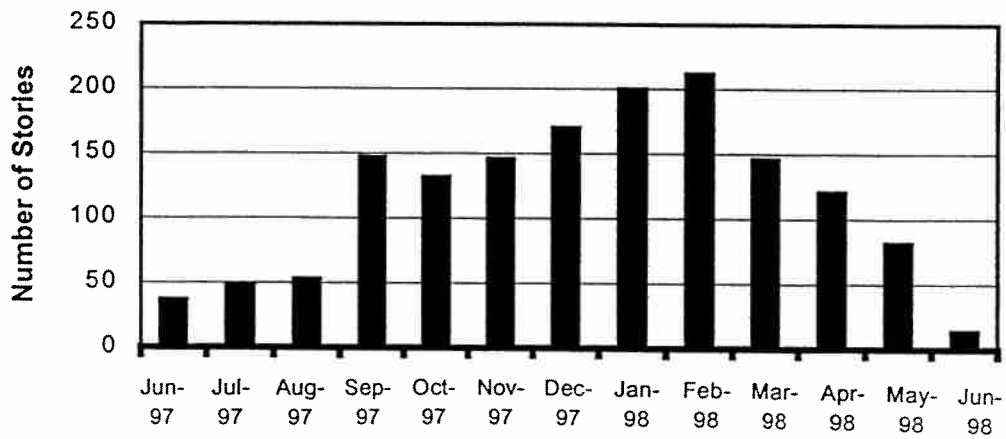
The relationship between Ecuador Civil Defense and COPEFEN was therefore problematic from the start, and a serious bureaucratic battle quickly developed over which was "in charge" of responding to ENSO. In late 1997, in a memo record of a conversation with a USAID representative, an official of a friendly donor government

expressed concern over the public confrontation, reported in national newspapers, between Defensa Civil and the Unidad Coordinadora. The official noted that . . . [Coordinadora director] Luis Carrera de la Torre assured [him] that he (Carrera) was still in charge of overall El Niño coordination efforts. Nevertheless, Carrera admitted that the Unidad Coordinadora simply lacked the ability to deliver resources to areas impacted by El Niño.

Table 1
Domestic Media Coverage of the 1997-1998 ENSO: Ecuador

Number of ENSO-Related Stories: June 1, 1997, to June 31, 1998	
<i>Month</i>	<i>Number of Stories</i>
June 1997	37
July 1997	49
August 1997	53
September 1997	147
October 1997	132
November 1997	146
December 1997	170
January 1998	200
February 1998	212
March 1998	146
April 1998	121
May 1998	82
June 1998	14
TOTAL	1509

Figure 1
Domestic Media Coverage of the 1997-1998 ENSO: Ecuador



Thus, the government of Ecuador had an existing organization, Ecuador Civil Defense, that had operational capabilities but lacked the political weight and administrative leadership to coordinate the various ministries. The government then created the *Coordinadora*, which in theory at least had the required political connections (through its base in the presidency) to actually coordinate across ministries, but it lacked operational capabilities. Instead of complementing each other, these two entities then began months of rivalry in which no one, including the donor community, knew “who was on first.” Therefore, with 1) COPEFEN theoretically charged with leading but unable to carry out operations, 2) a civil defense system capable of operations but not of leading, and 3) a disjuncture between the two, Ecuador had the worst of both.

In March 1998, however, the situation improved—but for a very negative reason. The director of COPEFEN, Carrera de la Torre, was charged with corruption in the misappropriation of relief supplies coming from Miami. He went into hiding but was replaced, however, by an able political leader (a former governor) from the coast, Antonio Andreta Arizaga, who improved communication (holding weekly meetings) and relations with Ecuador Civil Defense. Under Andreta Arizaga, COPEFEN also increased representation from, and opened an office on, the coast (in Guayaquil), bringing it much closer to the affected areas and reducing its “Quito” image.

The context for managing ENSO then became even more complex. Interim President Alarcón had earlier convoked a Constituent Assembly to draft a new constitution, but when, on its own, the assembly decided to extend its time and increase its mandate, Alarcón dissolved it and shut down its meeting site, creating a political and legal crisis. Student demonstrations also erupted over increased tuition, and anti-government protests were reported in the provinces most affected by ENSO. Strikes and marches were especially noteworthy in the province hardest-hit by the 1997-1998 ENSO (Manabi), and, for a time, the government seriously considered declaring martial law there.

At this point another layer was added to government’s attempts to manage the 1997-1998 ENSO. Given the wide open political

situation, the sitting vice president of Ecuador resigned to run for the presidency, and on April 24, 1998, Interim President Alarcón named a former governor of Guayas province (on the coast), Pedro Aguayo Cubillo, as the new vice president of Ecuador. In his new post, however, Aguayo was *also* assigned responsibility for “coordinating government activities to confront the emergency and plan reconstruction in areas affected by [ENSO],” thus creating yet another ENSO coordinating entity. COPEFEN was now supposed to report to the Office of the Vice Presidency. An internal report from a donor government profiled the situation in late June 1998 this way:

The duplication of functions within the state shows institutional waste, loss of credibility with donors and financial institutions, and above all delay in responding to the immediate and middle-term needs of the [ENSO-affected] communities.

Nonetheless, as the 1997-1998 ENSO began to wind down, Vice President Aguayo went to Washington and presented an interesting idea at a World Bank meeting on ENSO:

Ecuador proposes to establish in the Vice Presidency of the Republic a [permanent] “National System for Risk Management,” with an eminent technical team . . . to ensure that risk variables are incorporated in planning infrastructure development, territorial [development] policies, construction codes, as well as in development planning for urban areas.

Given the multiple risks to which Ecuador is subject, this proposal for an entirely new, relatively high-profile, and broadly mandated “national emergency organization” makes perfect sense. In theory at least, this organizational innovation was close to ideal. The problem was the political timing and context; Aguayo made this proposal 40 days before a new government was to take office (August 8, 1998), and the tradition is for incoming Ecuadorean administrations to downplay, if not completely ignore, any ideas or proposals from the departing administration. So the government of Ecuador will remain with a layered but duplicative emergency response structure with two of the three layers temporary and only one layer permanent—the lowest and the one marginalized

during the 1997-1998 ENSO (Ecuador Civil Defense).

Interestingly, further complicating institutional response to the 1997-1998 ENSO, incoming President Jamil Mahuad Witt created yet another authority responsible for reconstruction in ENSO-affected areas, CORP-ECUADOR, without, however, dissolving COPEFEN and/or clarifying the role and responsibilities of Ecuador Civil Defense.

Peru

Reflecting on the government of Peru's response to the 1997-1998 ENSO, a close observer of the Peruvian political scene offered this contextual observation in an interview with the lead author of this monograph in late 1997:

You have to understand something. Everything, absolutely everything, that goes on in this country revolves around Fujimori's campaign for [re-election in] 2000, and that includes El Niño, which became very political here. Great photo-ops, if it doesn't backfire.

Virtually the same point was made in the EIU's fourth quarter 1997 Peru report:

The El Niño climatic phenomenon could be a key factor in determining his [Fujimori's] support in the coming year. If damage is less than expected, he could benefit by claiming credit for preparatory public works. If it is severe, he could be blamed for the weakness in preparations despite the efforts made, and face accusations of fiscal imprudence.

To illustrate the extraordinary degree to which the 1997-1998 ENSO became political, Table 2 and Figure 2 present the story counts (totaled) in three major Peruvian dailies (*El Comercio*, *Expreso*, *La República*), again over the 13-month period (more than 4,000 stories appeared in the local press).

In point of fact, of the three Andean countries, Peru was the first to recognize and take action on the 1997-1998 ENSO. The onset of a likely major ENSO was announced in June 1997, and as noted earlier, the government of Peru began a series of flood control works based on the belief that the new ENSO would pretty much repeat the 1982-1983 event and that the principal effect would be flooding in the extreme north of the country. The most conspicuous aspect of the government's "pre-

vention" activities in the latter half of 1997, however, was not institutional; rather, it was the personal role of President Fujimori.

Fujimori had become president of Peru in July 1990 as the quintessential outsider, harboring a profound distrust of the traditional Peruvian elite, political parties, and the established system of government. Indeed, he led an "auto coup" in April 1992 that dissolved the Peruvian Congress and gave him virtually authoritarian control of the country. Therefore, he has strong centralist preferences, and his "style" can best be described as populist and direct action, avoiding use of the normal administrative apparatus.

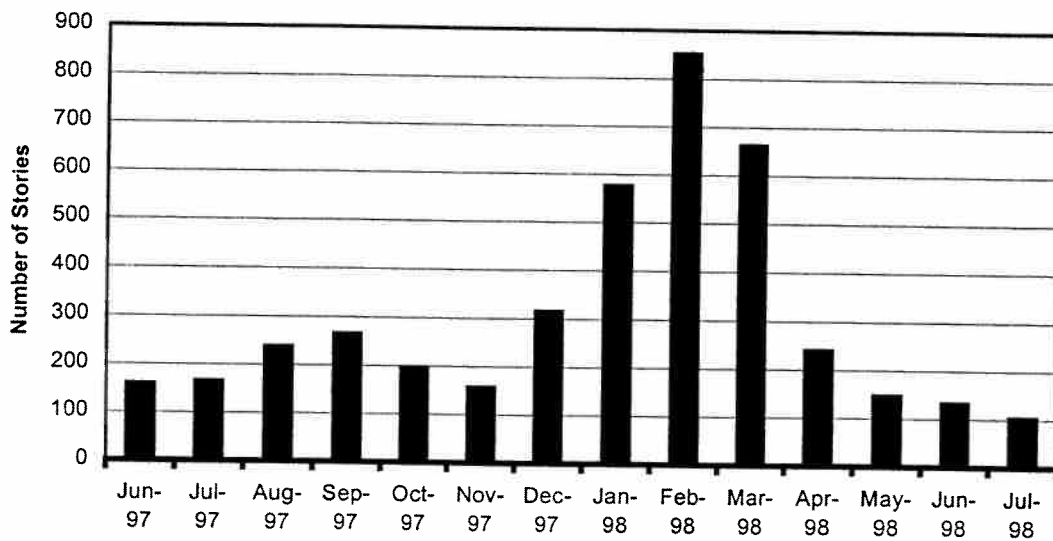
Consistent with this orientation, the Fujimori government's first organizational action was *not* to convoke the national civil defense system (in place since 1972), headed by *Instituto Nacional de Defensa Civil* (INDECI, the National Civil Defense Institute). Rather, in June 1997 it created a *Comisión Nacional de Acciones de Emergencia* (CONAE, National Commission for Emergency Action), an ad hoc cabinet-level group from the ministries of Transport, Communication, Housing and Construction, Agriculture, and Defense. The organizational base for CONAE was Fujimori's own *Ministerio de la Presidencia* (MIPRE, the Ministry of the Presidency). INDECI (Peruvian Civil Defense) was conspicuously absent from CONAE (inexplicably so was the Ministry of Health). A month later, in July, INDECI was brought into the CONAE structure—but only as the *Secretario Técnico* (Technical Secretariat—essentially staff).

Thus bypassing INDECI and even local government, President Fujimori—with considerable fanfare and publicity—personally led and used MIPRE and CONAE to carry out the prevention efforts. To the extent that local units of government were involved, Fujimori used the *Consejos Transitorios de Administración Regional* (CTARs, Transitional Regional Administrative Councils). Created, appointed, staffed, and funded by the Fujimori administration in Lima, these CTARs had been superimposed on provincial and local governments in the early 1990s as a way to "depoliticize" administration of the country. Therefore, between MIPRE, CONAE, and a region's CTAR, the Fujimori government marginalized not only INDECI but

Table 2
Domestic Media Coverage of the 1997-1998 ENSO: Peru

Number of ENSO-Related Stories: June 1, 1997, to July 31, 1998	
<i>Month</i>	<i>Number of Stories</i>
June 1997	160
July 1997	166
August 1997	238
September 1997	266
October 1997	198
November 1997	157
December 1997	316
January 1998	577
February 1998	853
March 1998	664
April 1998	241
May 1998	148
June 1998	134
July 1998	104
TOTAL	4222

Figure 2
Domestic Media Coverage of the 1997-1998 ENSO: Peru



also elected local officials, local political leaders, many NGOs, and civil society. In the words of one observer, "responding to El Niño became a one ring circus—Fujimori's." The marked tendency of the Fujimori administration to attempt central control of everything was noted early by the EIU in its fourth quarter 1997 Peru report (p. 13):

Preparations for the heavy rains in the north of the country and droughts in the south, which are expected to accompany the El Niño weather pattern in the coming months, have been allocated a special budget. This expenditure has been introduced through Decretos de Urgencia (emergency decrees), and the spending will be administered by the presidency, which already controls 40% of the central government budget. As such, the spending will increase the centralisation of control of spending and diminish budgetary transparency.

Various field visits to ENSO-impacted areas in late 1997 and 1998 confirmed that essentially two local governments coexisted. Most *municipios* had an elected government (with local knowledge and contacts but with scarce and tightly controlled resources) and an office of the centrally appointed CTAR (with many more resources and much greater flexibility). The Fujimori government also created *Comités de Operaciones de Emergencia* (COERs, Emergency Operations Committees) at the regional level to work under the CTARs—essentially duplicating the national civil defense system. Although transcended at times by considerable individual efforts at the local level, the dual structure guaranteed conflict, lack of communication, and miscommunication in administration generally and in ENSO management specifically. An internal report by a representative of a donor government wove many of the problems together:

Another difficulty is the competition and/or lack of coordination between local and regional governments in both the mitigation and emergency response phases. This is due to the nature and composition of these governments. Local governments (provincial and district municipalities) are elected and represent a cross-section of political parties. Officials of regional governments, also referred to as the Regional Transitory Administrative Councils (or as CTARs using the Spanish ac-

ronym), are appointed by President Fujimori. The CTARs have larger budgets, while still dependent on the Ministry of the Presidency for their funding. Local government budgets have very little flexibility, unless authorized by the national government in the case of emergency. While government representatives at both national and regional levels have complained that the municipal government is doing nothing to mitigate and/or respond to the disasters, mayors point out that if they make unauthorized expenditures they can be charged with misuse of funds.

Compounding the situation is the fact that mayors are automatically the official heads of the local civil defense structure. Yet the [central] government has set up Emergency Operations Committees at regional levels that have basically usurped all functions away from the civil defense committees, without disbanding them. This has created two structures that are basically in conflict with each other. This has also led to more resources and emphasis placed on public prevention and mitigation works, in detriment to strengthening the organization and preparedness of the population to deal with expected emergencies.

In September 1997, the government dissolved CONAE. No substantive reason was given, but one close observer opined that it was because President Fujimori wanted to exercise even more personal control of ENSO preparations. Consistent with this perspective, rather than elevating INDECI, the Fujimori government moved ENSO management responsibilities to the office of the *Presidente del Consejo de Ministros* (PCM, the President of the Council of Ministers—a prime minister). The PCM was Alberto Pandolfi, a close confidante of President Fujimori. INDECI was again assigned only a staff function to the PCM.

Although Peruvian fishermen started seeing the early effects of ENSO in August, the first significant damage from the 1997-1998 ENSO in Peru came in the latter half of December 1997, and it soon became apparent that it was not to be a simple repeat of 1982-1983. Indeed, while many of the prevention works carried out so publicly in the previous six months helped mitigate some damage, it became clearer week by week that this ENSO was different. Flooding and landslides (*Inuacos*) began to occur not only on the north coast but

also inland and even south of Lima. It was a series of unpleasant surprises for the Fujimori government.

INDECI began reporting the accumulating damage from the 1997-1998 ENSO. As noted previously, however, in early January 1998 the office of PCM Pandolfi removed all information dissemination and donor contact responsibilities from INDECI, centralizing both functions in its own offices. No substantive explanation was offered, but the following combination of interrelated factors appeared to be at play: 1) ENSO damage was more severe and promised to be more widespread than anticipated, embarrassing the pre-impact (June-December 1997) activism of President Fujimori; 2) the office of the PCM was much more experienced in media relations and "spin control" than INDECI; and 3) the Fujimori government was concerned that foreign investment and the international financial community might become wary of Peru if the full extent of ENSO effects became known. Indeed, one informed source said that the government of Peru informally requested that the U.N. office in Lima not convene a general "donors' meeting" to avoid information exchange that it (the Peruvian government) could not control.

The degree to which the 1997-1998 ENSO became political is best illustrated by a subsequent change in the national government's institutional arrangement to manage ENSO effects. In early June 1998, PCM Pandolfi announced his resignation to return to "private life." Less than a month later, however, President Fujimori announced the formation of a *Comité de Reconstrucción Nacional* (CEREN, the National Reconstruction Committee). With an announced budget of US\$620 million (US\$345 million of which was slated to come from external sources), CEREN was charged with reviewing all ministry proposals for reconstruction; it was then to set priorities and make funding decisions. The director of CEREN was none other than . . . Alberto Pandolfi! His earlier resignation then suddenly made sense, as a close observer of Peruvian politics in a donor embassy described CEREN as "a parallel cabinet— but with a large pot of flexible funds."

In a July 1998 interview with donor country representatives, Pandolfi emphasized

that CEREN defined reconstruction as exclusively "national public infrastructure" and that contracts would be let to the private sector for the vast majority of the projects. Pandolfi indicated that 36 months was the time frame for the completion of the projects, after which CEREN would cease to exist. Interestingly, that would take CEREN (and reconstruction from ENSO 1997-1998) right through the year 2000 presidential elections, a point not lost on the EIU:

[Fujimori's personal attention to disaster areas] has already served to revive his popularity—which flagged notably in 1997. The reconstruction phase will provide the president with ample opportunities to revert to his favoured role as champion of the poor, inaugurating bridges, roads and schools damaged by flooding and landslides. More important, this situation and the president's method of dealing with it are likely to last well into 1999 and may serve as a precursor to the April 2000 presidential and congressional elections. [EIU (Peru), 1998, Second Quarter, p. 3]

According to July 1998 figures, the government of Peru actually had access to more external financing than the announced US\$345 million. The following amounts were then available or in the final stage of negotiation: \$150 million from the World Bank; \$150 million from the IDB; \$100 million from the Overseas Economic Cooperation Fund of Japan; \$50 million from the EXIM Bank of Japan; \$20 million from CAF; \$10 million from the U.S. government—for a total of US\$480 million. It is necessary, however, to subtract US\$55 million from the World Bank and IDB total because that funding was specified as reimbursement for "prevention" expenditures by the Peruvian government in the June-December 1997 period.

At donor insistence, all CEREN reconstruction projects had to explicitly take into account future risk and therefore include hazard mitigation components. INDECI, however, had little or no input into CEREN decision making, so Peruvian Civil Defense was effectively out of the reconstruction—and therefore the mitigation— policy loop.

Bolivia

The government of Bolivia institutional response to ENSO 1997-1998 followed the general pattern seen in Ecuador and Peru with, of course, locally specific differences. Media attention was again notable, although less in absolute terms than in either Ecuador or Peru, as Table 3 and Figure 3 show (the story count was totaled from three major dailies: *La Razón*, *El Diario*, *Presencia*).

Maintaining our focus on civil defense, the system in Bolivia (as in Ecuador and Peru) comprises two interrelated entities: 1) The *Dirección Nacional de Defensa Civil* (DNDC, the National Civil Defense Directorate), which was created in 1983 (after the 1982-1983 ENSO), serves as headquarters, and is located in La Paz; 2) the *Sistema Nacional de Defensa Civil* (SNDC, the National Civil Defense System), which was created in 1997, reaches—at least in theory—to the municipal level, and is—again in theory—national in scope.

From 1983 to 1996, the DNDC had its own budget and was effectively autonomous. In 1996, however, the DNDC was assigned to the Secretariat of the Ministry of Defense, which curtailed its decision-making autonomy. Then, when the SNDC was created in 1997, the DNDC and the entire civil defense system were made directly responsible to the minister of defense, which totally eliminated any vestiges of civil defense autonomy. All expenditures and deployments had to be approved personally by the minister of defense. At the central government level, the law creating the SNDC also created a multi-sector Council of Ministers headed by the minister of defense. On paper at least, this structure might assure some coordination among the various ministries.

The problem was that the government under President Hugo Banzer, however, was (and remains) a *coalition* government of several, only loosely compatible parties, and the ministries were divided up among the coalition. The Ministry of Agriculture, for example, went to the populist CONDEPA (*Conciencia de Patria*) party, a minor member of the coalition. The Ministry of Defense went to the principal party in the coalition, the ADN (*Acción Democrática Nacionalista*). Complicating the situation even further was the fact that the ADN has several competing internal factions, each headed by a

person with presidential aspirations for the next election. The effect was that few ministers have any incentive to cooperate and therefore possibly make someone else “look good.” Although written later, an EIU report captured this endemic problem of coalition governments:

Much-publicised infighting among members of the four-party ruling coalition since it took power in August last year [1997] has tarnished the government's image. A persistent problem for the government as it attempts to forge unity has been ingrained expectations that political support will be rewarded by allocation of public posts. Disagreement over the allocation of posts has compounded tensions within the coalition. [EIU (Bolivia), 1998, Third Quarter, p. 6]

To return to our unit of analysis, civil defense, the government of Bolivia decreed a state of national emergency in September 1997. Faced with the complexities of the 1997-1998 ENSO, the government then made another major institutional change that pushed the DNDC even further down the chain and demoralized it. The government created the (supposedly temporary) *Unidad Técnica Operativa de Apoyo y Fortalecimiento* (UTOAF, Technical and Operational Support Unit). UTOAF reported directly to the minister of defense and was effectively inserted as a layer between the minister and the civil defense structure. Its stated purpose was to negotiate with the international donor community, especially the World Bank (the lead donor with US\$25 million committed), and to channel funding and resources to the various sub-national jurisdictions (*regiones*, regions) affected by the 1997-1998 ENSO. The problem was that the relationship between UTOAF and civil defense, especially the DNDC, was never clarified. A donor country field report of March 1998 noted that

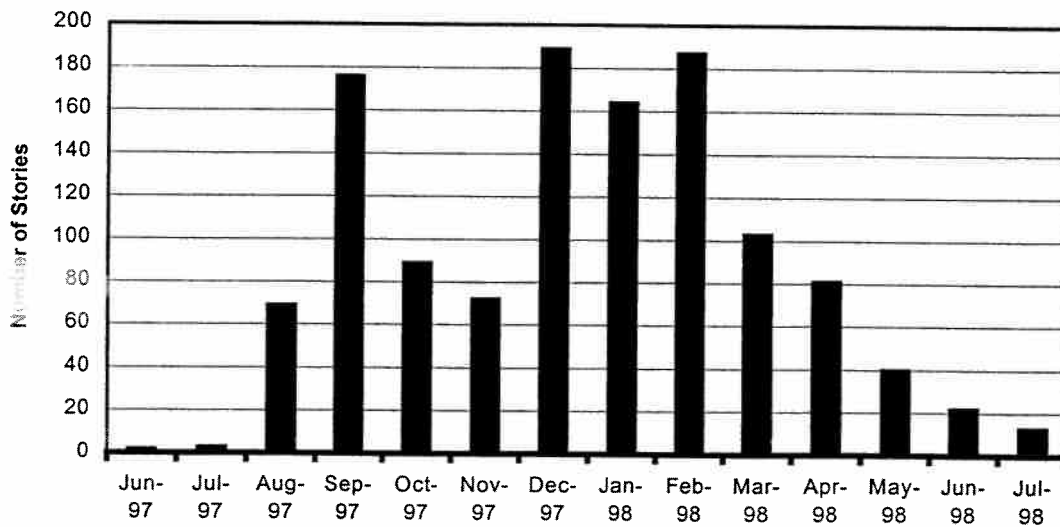
the conflict between the Director of Civil Defense and UTOAF is both frank and open. The Minister of Defense has maintained the situation unchanged this past year. The conflict reflects the present lack of coordination in responding to ENSO and discredits both organizations.

The government's institutional response problem was seen as so severe that the international donor community in La Paz met

Table 3
Domestic Media Coverage of the 1997-1998 ENSO: Bolivia

Number of ENSO-Related Stories: June 1, 1997, to July 31, 1998	
<i>Month</i>	<i>Number of Stories</i>
June 1997	2
July 1997	3
August 1997	69
September 1997	176
October 1997	89
November 1997	72
December 1997	189
January 1998	164
February 1998	187
March 1998	103
April 1998	81
May 1998	40
June 1998	22
July 1998	13
TOTAL	1210

Figure 3
Domestic Media Coverage of the 1997-1998 ENSO: Bolivia



in April 1998 to review the situation and chart a course of action. The result was a very detailed letter, on behalf of the entire donor community, from the in-country U.N. representative of the FAO (Food and Agricultural Organization) to Minister of Defense Fernando Kieffer. For our purposes here, the main points were as follows:

1) The current situation demonstrated an inability to coordinate the ministries of Agriculture, Health, Basic Sanitation, Education, and Sustainable Development (one donor representative called it a "leadership vacuum"). The recommendation was to remove coordination responsibilities from the minister of defense and give that role to the Ministry of the Presidency.

2) While UTOAF had played an important role in coordinating with the donor community, it needed to be more clear and active in channeling resources to the regional level. Its financing criteria for local projects were held to be especially vague and confusing.

3) Joint planning between national and regional authorities was seen as inadequate, especially when it involved rehabilitation from the 1997-1998 ENSO.

The minister of defense did not respond officially to the donor community's letter. In the end, however, the DNDC was demoralized by its ENSO experiences and widely seen as politically impotent and unable to protect itself bureaucratically, which it obviously had been.

VI

THREE COUNTRIES AND THE DISASTER MARGINALIZATION OF CIVIL DEFENSE: WHY?

While the details differed, civil defense in each of the three Andean countries was marginalized in the response to the 1997-1998 ENSO. Through more than two dozen field interviews, several reasons were adduced for the sidelining of the three civil defense organizations and the creation of temporary alternative structures. Interestingly, the reasons were largely common across the three countries.

The first argument was that the civil defense organizations “lacked capability” in the sense that they were understaffed, low-budget, and low-profile. That argument begs the question, however, because it was certainly possible to rapidly expand and strengthen civil defense, rather than create new organizations (e.g., COPEFEN in Ecuador, CONAE in Peru, and UTOAF in Bolivia) that had to start from scratch.

The second argument was that the “civil defense mentality is response, not mitigation.” Furthermore, civil defense officials are seen as technicians (*técnicos*) “not long-term thinkers.” This is a more cogent argument. With some exceptions, the civil defense officials in the three countries do seem totally operation- and response-oriented. In fact, several have expressed concern about becoming more proactive in multi-sectoral mitigation, which they see as involving policy and development issues “above our level” or “outside our area.”

The third argument was quite interesting. Probing into how the various presidents (via lower-level officials and observers) felt about civil defense as the 1997-1998 ENSO deepened and why they would opt for the creation of duplicative organizations, we found a

commonality: the director position in all three civil defense organizations was held by an individual “not personally known” to the president—in all cases an active or retired military officer with little in the way of political connections. In point of fact, civil defense directorates throughout the region tend to be minor patronage positions where the person appointed to the position is, at best, “a friend of a friend of the president” and sometimes not even that. As the 1997-1998 ENSO increasingly became a national crisis, however, each president wanted someone he knew and trusted (to quote one official, “*un amigo, una persona de confianza*”) in charge.

The fourth argument is somewhat a derivative of the others: civil defense was incapable of securing the cooperation of the many ministries and offices that had to be involved in something as complex as a major ENSO (to quote one official, “*no tenían poder convocatorio*” [they lacked power to convene real meetings]). This argument could hardly be disputed, but it is a vicious circle, for unless its profile and resources are increased, civil defense will never be seen as powerful enough to concern/coordinate other offices, much less ministries.

The fifth and last argument is especially contextual, and it has to do with the very limited time horizons or “vision” of political leaders. As one political observer noted (and he was echoed by others in all three countries): “Everything in these countries is based on short-term calculations of immediate advantage” (*cortoplacismo*), a problem that is exacerbated by the lack of a permanent civil service

that could provide greater organizational stability and learning. In such situations, so the reasoning goes, temporary organizations (e.g., COPEFEN, CONAE, UTOAF) “solve,” at least symbolically, the crisis of the moment. Making long-term governmental-institutional changes, however, is more costly (involving permanent budget increases), more difficult (both legally and politically), and would more than likely help a *future* government, and who cared about that?

The conundrum, of course, is that all three Andean countries face a multiplicity of natural and technological hazards and a recurrent ENSO problem, but their *permanent* disaster management structure, civil defense, is low-profile and weak. Therefore, when they face a disaster or catastrophe, they create *temporary* institutional structures to deal with the problems for a year or two, after which they revert back to the prior, and frankly inadequate, structure.

VII

CONCLUSION: READY FOR THE NEXT ENSO?

We opened this report with a question: With two major ENSOs in the last 17 years, will the governments of Ecuador, Peru, and Bolivia be institutionally better prepared to deal with

the next major ENSO? Not surprisingly, the answer is both yes and no. The problem is that the negative response is by far the more important.

The Good, the Bad, and the (Ugly) Question

On the positive side, at the level of individual reconstruction and rehabilitation projects, at least those financed by the World Bank, the IDB, and CAF, it seems clear that the post-1982-1983 ENSO flat learning curve and “replication *in situ*” will be avoided. By donor loan stipulation, mitigation measures must be included in projects currently being designed and constructed. These externally financed projects, however, will be largely limited to infrastructure (e.g., roads, bridges, irrigation and water management systems). The inclusion of serious mitigation components in projects funded nationally or sub-nationally is much less clear or certain.

Also on the positive side, it seems clear that individual agencies and ministries are internalizing their lessons from the 1997-1998 ENSO and will be better able to cope with the next major one. The ministries of health in the three countries are good examples, as are the various scientific offices dealing with climate and rainfall. That is, *intra*-organizational learning from the 1997-1998 ENSO is most impressive

and stands in sharp contrast to the relatively slight gains made after the 1982-1983 event. The problem remains at the *inter*-organizational level.

In terms of institutional readiness for the next major ENSO in the Andean countries, the most significant negative lies in the most important area: multi-sectoral coordination. It seems clear that no major permanent institutional change will occur in any of the three countries in the area of risk and hazard management at the national level. That is, the various offices of civil defense will remain each country’s nominal “national emergency organization,” although each was politically and bureaucratically depreciated in the 1997-1998 ENSO response. As a result, none shows any signs of being able to secure the kind of multi-ministerial, multi-sectoral coordination required for effective long-term mitigation and preparedness. Moreover, the precedent has been set for their future marginalization with the next major disaster, ENSO or other. Can anything be done to break this pattern?

Event Thresholds, a Firebreak, and Possible Solutions

To answer the question fully and fairly, we should recall an especially useful event typology. Building on previous studies of organizational response to extreme events,

veteran disaster researcher Henry Quarantelli (1987) once stratified such events by their response requirements. In his schema, *accidents* are typically dealt with by established response

organizations normally expected to be involved in an event (e.g., police, fire services, paramedics). *Emergencies* require the addition of latent organizational capabilities, for example the Red Cross, the National Guard, or civil defense. *Disasters*, however, involve not only the expected participation and activities of response and latent organizations, but also assistance from agencies and/or organizations that “extend” into the impact area, for example private construction companies or public utilities that become involved in non-standard activities. *Catastrophes* are so severe that they are marked by the emergence of entirely new organizations or even social movements.

While this typology does not transfer perfectly to Latin American contexts, the threshold logic does, and it helps clarify what happened to civil defense in the three countries during the 1997-1998 ENSO, what will likely happen in future events, but also what can be done to break the pattern. The key is a political firebreak between the first two and last two event levels.

There is a bit of a tautology here, but, to explain, because the political stakes involved in response to accidents and emergencies are usually low, civil defense will be activated in emergencies and will remain “in charge.” If, however, an event passes the emergency threshold and becomes a disaster, the political stakes increase significantly, and the government cannot let the event response remain in the hands of an organization with little political profile or experience. That logic becomes even more pronounced if the event proves a true catastrophe, with all the attendant political repercussions (especially the possible development of autonomous citizen groups or social movement organizations).

Interestingly, the threshold logic makes clear why the 1997-1998 ENSO achieved catastrophe status in the three Andean countries. As the effects deepened in late 1997 and early 1998, the ENSO passed from being a series of relatively localized emergencies (therefore involving civil defense) to a disaster requiring attention from national-level authorities (in all cases eventually the presidency), who then created the new response organizations detailed above—qualifying the 1997-1998 ENSO as a catastrophe.

So what does the analysis to this point and the adaptation of Quarantelli’s threshold logic mean for the future of civil defense organizations in the three Andean nations? One option recognizes that civil defense organizations in the three countries are still the only *permanent* emergency response organizations, and attempts must be made to strengthen them, accepting the fact that in a disaster or catastrophe, civil defense will likely again be sidelined. The idea, however, is to improve civil defense capabilities so that *fewer events pass the firebreak*. That is, because event levels, and therefore the firebreak, are determined by response requirements versus response capabilities, if civil defense in the Andean nations can improve their capabilities, fewer emergencies will become either disasters or, worse, catastrophes.

The second option starts out like the first—strengthen civil defense—but adds an entirely new vision that requires a fundamental shift in the self-image of Andean nation civil defense officials. Under this scenario, civil defense leaders would seek to improve capabilities but also have come to understand and accept that a disaster or a catastrophe becomes rapidly political. However, they explicitly anticipate and *plan proactively* for that change in order to be central to new structures or organizations that emerge (and thereby avoid being marginalized). Under this option, as an event approaches the emergency-disaster firebreak, it is civil defense itself that articulates something like the following: “Mr. President, the situation is beyond our capabilities and requires a national-level response and attention from the highest levels of several ministries. We have anticipated this contingency, and here is a plan to organize the required response. We have also drafted most of the necessary decrees and procedures and stand ready to become the core, the infrastructure, of this higher-level organization.” This option, of course, hardly guarantees success, but it does make civil defense at least a proactive player rather than a passive victim as an event passes the political firebreak. For lack of a better term, this could be called the “accordion” option, as civil defense actually plans for a rapid and inclusive expansion to help the entire government cope with a disaster or catastrophe.

VIII

POSTSCRIPT: DECEMBER 1999

Ecuador

The year 1998 turned into 1999 and Ecuador was still plagued by political and economic problems, including lingering ENSO effects. According to the quarterly EIU country reports for 1999, Ecuador's economy continued its mid-1998 contraction well into the following year. The first quarter of 1999 saw a year-on-year contraction (negative growth) of -3.2% in GDP, followed by a second quarter contraction of *another* -5.7%. Petroleum was one of the few bright spots, and, led by cocoa, agriculture recovered somewhat from ENSO impacts (up 5.7% year-on-year), but banana and coffee production were off significantly. Because of ENSO flooding of plantations and the increased humidity, banana production in 1999 was down 13% even compared to 1998, and coffee production was off 42% compared to 1998, which was itself (with ENSO impacts deepening) not exactly a banner year for either crop.

The larger economic problem, however, was a national budget and banking/financial services crisis totally unrelated to ENSO. The 1999 national budget was severely flawed by overestimated revenues, and the problem was compounded by the progressive collapse of Ecuador's antiquated banking system. Indeed, by the end of the second quarter of 1999, more than one-third of the banks in Ecuador had either been liquidated or taken over by the government. As the EIU summed up the situation in its fourth quarter 1999 report (p. 18):

During the second quarter, the stimulus to oil production and exports of the sharp recovery in oil prices since April could not offset the lingering effects of the damage caused by El Niño and the general economic deterioration caused by the banking crisis.

At least as antiquated as Ecuador's banking system is its political system, especially Congress, which remained mired in personalism and patronage reminiscent of the 1950s. President Jamil Mahuad, who was inaugurated in August 1998, committed to IMF-style economic stabilization, modernization, and privatization (an IMF agreement is crucial to avoiding a full-blown Ecuadorean balance of payments crisis and resulting economic collapse). The problem was a divided and obstructionist Congress that the president's party did not come close to controlling. The EIU was blunt in its fourth quarter 1999 Ecuador report (p. 6):

Ecuador's political environment will be the most serious threat to the country's prospects of economic recovery over the next few years. Political opportunism, congressional fragmentation, and a lack of realism among many political actors in the opposition-dominated Congress will make negotiations over key reforms tortuous.

Given this political environment and the array of immediate problems confronting Ecuador and the Mahuad government, it should come as no surprise that improving institutional readiness for the next major ENSO (or any disaster for that matter) has received little

attention. While associated with the previous (Alarcón) government, both CORPECUADOR and COPEFEN continue to exist—but probably not for long. Headed by the vice president of the country, CORPECUADOR has focused almost exclusively on rebuilding infrastructure, principally the roads connecting the coast to the rest of Ecuador; it is supposed to disappear when that task is completed. COPEFEN also continues to exist as a kind of staff to the vice president to help coordinate with CORPECUADOR, but it is to disappear in the next few months.

For its part Ecuadorean Civil Defense was given a budget increase—but only

for the ENSO. To be fair, the Mahuad government has been distracted by the serious budget and banking problems, and a long-term strengthening of civil defense was clearly not a priority. As a result, Ecuador will face its next ENSO with just about the same underfunded, understaffed, and undercoordinated structure that was overwhelmed by the most recent ENSO. At that time *another* new ad hoc structure will probably be put in place to temporarily “manage” the disaster, and Ecuadorean Civil Defense will again be subsumed or sidelined. That is, nothing in the Ecuador case casts doubt on the marginalization thesis.

Peru

As in Ecuador, public, media, and leadership attention to the 1997-1998 ENSO experience receded during 1999 in Peru, and as ENSO losses clarified with time, the damage, as well as the various reconstruction efforts, began to be interwoven with other issues and problems affecting Peru. Overarching everything, however, was the upcoming presidential election of April 2000 and the intentions of President Fujimori. Indeed, it continued to be no exaggeration to say that virtually every major political-economic decision in Peru revolved around electoral considerations.

At the macro level, the Peruvian economy began to show a lessening of ENSO effects in August 1998—led by agriculture, fisheries, and mining—but weakness elsewhere held GDP growth to less than 1% for 1998 as a whole. The weakness continued into the first quarter of 1999, but the situation then improved markedly:

Economic growth rebounded in the second quarter [of 1999], rising to 4.2% year on year after expanding by 1.1% in the first quarter of 1999 and contracting by 0.6% in the fourth quarter of 1998. The high growth rate in the second quarter owes much to a statistical correction after the deep contraction experienced in the second quarter of 1998, when GDP fell by 2.9% mainly as a result of the effects of El Niño on primary sectors of the economy. [EIU (Peru), 1999, Fourth Quarter, p. 21]

According to public opinion polls (which admittedly emphasize Lima, never one of the president’s strong areas), President Fujimori was showing approval ratings of less than 40% in January 1999. Shuffling his cabinet twice, Fujimori announced a number of new programs and initiatives aimed at improving public support in anticipation of the April 2000 elections, two of which relate to the 1997-1998 ENSO.

One of the most tried and true ways to increase public support, at least in the short run, is to increase government spending, especially in the time preceding a national election, and this was clearly the intention of the Fujimori government. Interestingly, funding was to be in part derived from ENSO reconstruction monies, according to the EIU first quarter 1999 report (p. 7):

The recent cabinet changes appear to confirm the suspicions of many analysts, including the EIU, that fiscal policy will be relaxed in 1999-2000. Funds earmarked for El Niño reconstruction will help to finance this. Alberto Pandolfi, the new minister of transport, communication, and housing, and the president of the Comité de Reconstrucción El Niño [CEREN] . . . has pledged \$230 million this year for infrastructural works, a figure which could rise to \$400 million depending on availability of credit.

That is, and as was noted above, while CEREN was to focus on reconstruction

from the 1997-1998 ENSO, it also had to be considered part of the overall Fujimori electoral strategy for the April 2000 elections. Indeed, the government of Peru is currently finishing construction of 3,000 new housing units in the city of Ica, heavily damaged by the 1997-1998 ENSO. Probably not a coincidence, they are to be made available just before the April 2000 elections.

The second major initiative of interest was the surprise announcement in July 1999 that President Fujimori was committing to a "decentralization" plan for education and health budgets starting in January 2000. This plan would reduce control by the Ministry of the Presidency (MIPRE) and turn over major expenditure authority to municipalities. This signaled a philosophical reverse from the tightly centralized and hierarchical pattern that

is the hallmark of the Fujimori government—and which had led to such problems with localities trying to respond to ENSO impacts. In the opinion of many, however, this was "shrewd politics" rather than a change of heart—and a policy easily reversed after the 2000 elections.

As in Ecuador, the issue of improving Peruvian institutional capacity to respond to the next ENSO or any other major disaster was very rapidly lost in the maneuvering for the upcoming elections. Again as in Ecuador, the government of Peru will likely face its next major disaster with its inadequate civil defense structure—and will again have to create an ad hoc, temporary organization to manage the response. The marginalization hypothesis holds.

Bolivia

Of the three countries most directly affected by the 1997-1998 ENSO, Bolivia shows both the darkest and the most optimistic sides of the experience. The darkest was a major corruption scandal involving ENSO and other disaster relief funds. The optimistic note is a possibility of institutional innovation in disaster management, although nothing is guaranteed at this point in time.

To recall, Bolivian Civil Defense was brought under tight Ministry of Defense (and UTOAF) control (especially financial control) as ENSO impacts deepened. On the order of President Banzer, all international aid was to be channeled through that ministry and was therefore administered by Minister of Defense Kieffer. The same held true when the Aiquile area of Cochabamba department was hit by a series of ten earthquakes in mid-May 1998. The problem, however, then became a Bolivian version of the fox guarding the hen house.

Allegations began surfacing in early 1999 that ENSO and earthquake assistance funds were being diverted for other purposes, and Kieffer was dismissed from his position in a June 1999 cabinet shuffle. As the EIU noted in its third quarter 1999 Bolivia report (p. 10):

Mr. Kieffer is said to have spent these funds on equipping the armed forces instead of providing aid to the affected areas. Part of the investigation centres on his ministry's acquisition in May 1998 of a Beechcraft 1900 light aircraft, which cost some \$3m. It appears that the aircraft was purchased using El Niño relief funds but proved incapable of landing on the improvised landing-strips in the isolated rural areas most affected by El Niño. More damaging, Mr. Kieffer, along with the Cochabamba *prefectura* (provincial government), has attracted adverse attention because of the apparent disappearance of . . . \$336,000 disbursed by Japanese donors specifically for earthquake victims.

The defense ministry was not alone in being charged with corruption. Similar (but not disaster-related) problems had earlier become public in the judiciary and law enforcement branches of the government, and a mafia drug smuggling scandal would subsequently emerge as well. In the end, three cabinet ministers would be forced out.

On a more positive note, the CAF (*Corporación Andina de Fomento*) ultimately estimated Bolivia's 1997-1998 ENSO losses at \$525 million, less than the \$1.4 billion estimated for the 1982-1983 ENSO. Nonetheless, the 1997-1998 losses represented ap-

proximately 7% of the GDP. Infrastructure damage accounted for more than half the losses, and lost agricultural production accounted for most of the remainder, especially in potato, wheat, maize, cotton, and livestock.

A major problem was that the ENSO was followed by the May 1998 earthquakes and then by forest fires in August 1999 that destroyed more than four million acres of grassland important to the cattle industry. The EIU noted in its fourth quarter Bolivia 1999 report (p. 20) that the fires “underscored the continued vulnerability of Bolivia’s productive sector to natural disasters.” Reviewing the ENSO losses and then the fire losses, the EIU concluded that “[d]espite efforts by the defence ministry to develop emergency services to deal with natural disasters, the country is inadequately prepared and the productive sector remains highly vulnerable.”

The bright spot in all of this is a set of proposals trying to work their way through the Bolivian Congress. Draft legislation contemplates charging 1) the Ministry of Defense generally and the National System of Civil Defense specifically with *responding* to events, and 2) the Ministry of Sustainable Development with hazard reduction (i.e., *mitigation*).

The UTOAF would become permanent under this proposal but be converted solely to a fund for disaster reduction.

This legislative package is currently entitled, *La Ley de Atención para la Reducción de Riesgos y Atención de Desastres* (Law for Hazard Reduction and Disaster Response). It has been approved by the relevant cabinet members and by the congressional committee that attempts to oversee the Ministry of Defense. Unless it is considered in the extraordinary session of December 1999 (which is unlikely), the Bolivian Congress will take up this legislation in the January 2000 regular session. Although splitting mitigation (and possibly preparedness) from disaster response—and putting them in different ministries—poses serious problems in attacking the disaster problematic holistically, the Bolivian draft legislation would at least clarify roles and formally mandate *someone* with actual mitigation. That is, it would be at least a half-step forward in improving institutional readiness for the next ENSO or other major disaster. The law, however, is still a long way from passage and an even longer way from having budgeted funds behind it, the ultimate test of serious intent.

REFERENCES

- Albala-Bertrand, J.M.
1996 *The Political Economy of Large Natural Disasters, With Special Reference to Developing Countries*. New York: Clarendon Press.
- Betsill, Michele M., Michael H. Glantz, and Kristine Crandall
1997 "Preparing for El Niño, What Role Forecasts?" *Environment* 39 (10) (December): 6-29.
- Comisión Económica para América Latina y el Caribe (CEPAL)
1998 "Ecuador: Evaluación de los Efectos Socioeconómicos del Fenómeno El Niño en 1997-1998." Santiago, Chile: CEPAL.
- Cuny, Fredrick C.
1983 *Disasters and Development*. New York: Oxford University Press.
- The Economist*
1998 "The Season of El Niño." May 9: 35-38.
- Economist Intelligence Unit (EIU)
1997- *EIU Country Report, Bolivia* (3rd and 4th Quarters 1997; 1st, 2nd, and 3rd Quarters 1998;
1999 3rd and 4th Quarters 1999). London: The Economist Intelligence Unit.
- 1997- *EIU Country Report, Ecuador* (3rd and 4th Quarters 1997; 1st and 2nd Quarters 1998;
1999 1st, 2nd, 3rd, and 4th Quarters 1999). London: The Economist Intelligence Unit.
- 1997- *EIU Country Report, Peru* (3rd and 4th Quarters 1997; 1st and 2nd Quarters 1998;
1999 1st and 4th Quarters 1999). London: The Economist Intelligence Unit.
- Fritz, Charles E.
1961 "Disaster." Pages 651-695 in Robert K. Merton and Robert Nisbet, eds., *Social Problems*. New York: Harcourt, Brace, and World.
- Glantz, Michael H.
1996 *Currents of Change: El Niño's Impact on Climate and Society*. Cambridge, U.K.: Cambridge University Press.
- Golnaraghi, Maryam and Rajiv Kaul
1995 "The Science of Policymaking, Responding to ENSO." *Environment* 37 (1) (January-February): 16-44.
- Kreps, Gary A.
1989 "Future Directions in Disaster Research: The Role of Taxonomy." *International Journal of Mass Emergencies and Disasters* 7 (November): 215-241.

McEntire, David A.

- 1998 *Towards a Theory of Coordination: Umbrella Organization and Disaster Relief in the 1997-98 Peruvian El Niño*. Quick Response Report #105. Boulder, Colorado: Natural Hazards Research and Applications Information Center, University of Colorado.

Quarantelli, E.L.

- 1987 "What Should We Study? Questions and Suggestions for Researchers About the Concept of Disasters." *International Journal of Mass Emergencies and Disasters* 5 (March): 7-32.

Yin, Robert K.

- 1994 *Case Study Research, Design and Methods*. Thousand Oaks, California: Sage Publications.

THE AUTHORS

Richard Stuart Olson is Professor of Political Science and We Will Rebuild (WWR) Foundation Chair-Professor at the International Hurricane Center at Florida International University in Miami.

Juan Pablo Sarmiento, a medical doctor, is International Resources Group, Inc. (IRG) Special Projects Officer for the U.S. Agency for International Development, Office of Foreign Disaster Assistance (USAID-OFDA) and based in Bogotá, Colombia.

Robert A. Olson is President, Robert Olson Associates, in Folsom, California.

Vincent T. Gawronski is Adjunct Professor of Political Science and Post-Doctoral Research Fellow at the International Hurricane Center, Florida International University in Miami.

Amelia Estrada is a graduate student in the Latin America and Caribbean Center and a research assistant at the International Hurricane Center, Florida International University in Miami.