



CHAPTER 9

Managing Economic Crises and Natural Disasters

There is nowhere to work. We get sick and we don't have the money to get cured, we don't have medicines because they are expensive. The government makes everything expensive. . . . We don't have money to buy fertilizers, seeds, everything is in dollars. We don't have anything to eat. Everything is so expensive.

—From a discussion group of adult women at the time of a banking crisis, Juncal, Ecuador

[Security is] . . . the ability of persons to cope with disasters.

—From a discussion group, Little Bay, Jamaica

Economic crises and natural disasters can bring deep and sudden collapses in national output—and sharp increases in income poverty. Together with violent conflicts (see box 3.2 in chapter 3), they are great sources of vulnerability and insecurity. Worse, because of the collateral damage they cause, such as irreversible loss of human capital, they affect not only the current living standards of poor people but their ability to escape from poverty as well.

Malnutrition and dropout rates among poor chil-

dren may rise during economic crises and natural disasters. Poor households are often forced to sell their meager assets at depressed prices. These responses perpetuate chronic poverty, possibly reducing future economic growth because of the irreversible losses in human and physical capital. That is why preventing economic crises and natural disasters is so crucial. And that is why, when they occur, among the top priorities should be to protect poor people. Required for that protection are not only resources but also the instruments (safety net programs) to channel those resources to poor households. While developing countries and transition economies in general are vulnerable to crises and natural disasters, small states are especially vulnerable to adverse external events because of their remoteness and isolation, high degree of openness, susceptibility to natural disasters, and limited diversification.¹

Preventing and coping with economic crises

Even our limited access to schools and health is now beginning to disappear. We fear for our children's

future. . . What is the justice in sending our children to the garbage site every day to support the family?

—*Mother and father commenting on need to pull their children from school in the wake of economic crisis, Thailand*

Economywide crises entail sharply falling output, declining incomes, and rising unemployment. Pervasive in the 1990s, they came in different forms: fiscal crises, balance of payments crises, terms of trade shocks, currency crises, banking crises, hyperinflation. The economic crises in Mexico in 1995, in East Asia in 1997, and in Brazil and Russia in 1998 received wide media coverage. But they were not the only episodes of economic distress.² Most crises have been brought on by varying combinations of policy mismanagement and such external factors as terms of trade shocks, volatile capital flows, and contagion in international capital markets.

Economic crises hurt both the poor and the nonpoor, but they are far more devastating for those already in poverty or nearly poor, even if they are not hurt disproportionately. The welfare losses are larger for poor households and those who fall into poverty than for the rest of the population. Poor people are unlikely to have enough savings or self-insurance to see them through bad times, and they have little or no access to insurance schemes, whether social or market based (chapter 8).

An economic crisis affects the living standards of poor people and those living close to poverty through different channels:

- Typically, real wages fall and unemployment rises, driving down labor earnings.
- Nonlabor incomes fall as economic activity slows, and the prices of the goods and services produced by poor people may fall relative to other prices.
- Private transfers, particularly from family members, are likely to shrink as living standards fall across the nation.
- The meager assets of poor people are exposed to inflation or a collapse in prices.
- Macroeconomic crises slow the accumulation of human, financial, and physical capital, weakening the ability of poor people to escape poverty.

Is the observed fall in incomes during crises made worse by the policies to respond to the crises? The debate on this is long-standing. That rising poverty coincides with the policy responses does not mean that the policies caused the rise. Crises can occur because of past unsustainable macroeconomic policies or inability to adjust to

external shocks (terms of trade shocks, higher international interest rates, sudden movements in capital flows as a result of contagion). In such circumstances restrictive fiscal and monetary policies are inevitable and less costly than the alternative of delaying such measures, which could lead to a larger crash.

Once adjustment policies are accepted as inevitable, the way governments introduce fiscal austerity can worsen the adverse effects on the living standards of the poor and near-poor. For example, removing food or fuel subsidies would exacerbate the effects on poor people—unless compensatory measures are taken (chapter 4). So would increasing the rates and sometimes the coverage of indirect taxes on food and other products that figure large in the consumption basket of poor people. Net government transfers may decline as governments cut social assistance as part of a fiscal austerity program. Reducing the quantity and quality of public services used by the poor and near-poor would also worsen their situation.

But government actions can also mitigate the impact of crises on poor people. The task of the policymaker is to implement the combination of macroeconomic measures that results in the lowest cost in forgone output and affords the greatest protection to the living standards of poor people. A key element of a poverty-sensitive response is the right composition of revenue-raising measures and fiscal cuts. A poverty-sensitive response should also allow for the expansion of safety nets targeted to poor people (the “social insurance” component of social spending) during periods of macroeconomic adjustment.

Social impact of crises

There is a strong link between macroeconomic downturns and rising income poverty (table 9.1; see also figure 2.1).³ During crises many people become temporarily poor, and social indicators tend to worsen or to improve more slowly. Data suggest that the human capital of poor people, particularly poor children, can deteriorate. The damage can be irreversible, affecting the ability of these children to escape poverty when they reach adulthood.

In most countries in East Asia poverty rose as a result of the financial crises of the late 1990s: it is estimated that it rose almost 50 percent in Indonesia and that urban poverty doubled in the Republic of Korea.⁴ In both

Table 9.1
Effect of economic crises on incidence of poverty in selected countries

Percent

Country and type of crisis	Before crisis	Year of crisis	After crisis
Argentina, hyperinflation and currency	25.2 (1987)	47.3 (1989)	33.7 (1990)
Argentina, contagion	16.8 (1993)	24.8 (1995)	26.0 (1997)
Indonesia, contagion and financial	11.3 (1996)	18.9 (1998)	11.7 (1999)
Jordan, currency and terms of trade	3.0 (1986–87)	.. (1989)	14.9 (1992)
Mexico, currency and financial	36.0 (1994)	.. (1995)	43.0 (1996)
Russian Federation, financial	21.9 (1996)	32.7 (1998)	..
Thailand, currency and financial	11.4 (1996)	12.9 ^a (1998)	..

.. Not available.
 Note: Based on national poverty lines and per capita household income except for Indonesia (per capita expenditure), Mexico (household income), and Russia (household expenditure per equivalent adult). Data for Argentina refer to Greater Buenos Aires. For Indonesia poverty estimates before and during the crisis are based on the full SUSENAS (the national socioeconomic survey) conducted in February 1996 and 1999; estimates after the crisis are based on a smaller sample. Figures are not comparable across countries because poverty lines differ.
 a. Based on the socioeconomic survey conducted between February 1998 and January 1999, which does not fully reflect the impact of the crisis. Estimates from a smaller survey conducted during June–September 1999 put the poverty incidence at 15.9 percent.
 Source: Ministerio de Economía de Argentina 1998; World Bank 1994c, 1999dd; ECLAC 1999b; Lokshin and Ravallion 2000b.

countries, however, poverty fell as the economies recovered. In Russia the incidence of poverty rose from 21.9 percent to 32.7 percent between 1996 and 1998. In every crisis in Latin America and the Caribbean the incidence of poverty increased and several years later remained higher than it had been before the crisis.

Inequality may rise, fall, or remain unchanged during a crisis. In Latin America inequality (as measured by the Gini coefficient) rose in 15 of 20 crisis episodes for which there are data. In East Asia during the recent crisis, however, inequality remained practically unchanged, and in Mexico following the peso crisis in 1995 it fell. When crises are accompanied by increases in inequality, economic contractions can more than reverse previous gains in poverty reduction. In Latin America the poverty reduction from a 3.7 percent increase in per capita income for urban areas and a 2 percent increase for rural areas in the 1970s was reversed by just a 1 percent decline in per capita income in the 1980s.⁵ Even if inequality increases, the poorest fifth of the population is not always hurt disproportionately. In Latin America the income share of the middle fifths of the population often fell most during the 1980s debt crisis, but the share of the top tenth always

rose, sometimes substantially.⁶

The impact of economic crises on living standards is not fully captured by measures of inequality and income poverty. Economic crises are characterized by extensive mobility: previously nonpoor people may fall into poverty, and previously poor people may escape it. Evidence of sharp downward and upward mobility was found after the 1998 crisis in Russia, for example.⁷ Mean expenditures of people classified as poor in 1996 actually rose, and 42 percent of them escaped poverty after the crisis. By contrast, 61 percent of those who were poor after the crisis had not been poor in 1996. Put another way, 20 percent of the population fell into poverty as a result of the economic downturn. Even though overall inequality fell and a large share of the poor escaped poverty after the crisis, there was substantial downward mobility for many who were not previously poor and for some who were already poor. Those who become poor during economic crises often have different characteristics than the chronically poor. For example, they may be better educated. A study in the Philippines found that households with more education are more vulnerable to wage and employment shocks.⁸

Table 9.2
Social impacts of economic crises in selected countries

	Main crisis indicators	Health indicators	Education indicators
Argentina 1995	<ul style="list-style-type: none"> ■ Per capita GDP fell 4.1%. ■ Per capita private consumption fell 5.6%. 	<ul style="list-style-type: none"> ■ Per capita daily protein intake fell 3.8% in 1995, but increased 1.9% in 1996. 	<ul style="list-style-type: none"> ■ Growth in gross primary enrollment declined from 2.2% in 1993 to 0.8% in 1996.
Mexico 1995	<ul style="list-style-type: none"> ■ Per capita GDP fell 7.8%. ■ Per capita private consumption fell 11.1%. 	<ul style="list-style-type: none"> ■ Among children under age 1, mortality from anemia increased from 6.3 deaths per 100,000 live births in 1993 to 7.9 in 1995. ■ Among children ages 1–4, the mortality rate from anemia rose from 1.7 to 2.2 per 100,000. 	<ul style="list-style-type: none"> ■ Gross primary enrollment increased 0.44% in 1994, but fell 0.09% in 1995.
Indonesia 1998	<ul style="list-style-type: none"> ■ Per capita GDP fell 14.6%. ■ Per capita private consumption fell 5.1%. 	<ul style="list-style-type: none"> ■ The share of women whose body mass index is below the level at which risks of illness and death increase rose 25%. ■ Most indicators of child nutritional status remained stable. The exception may be the weight (conditional on height) of children under age 3, suggesting that families may be investing in some members at the expense of others. 	<ul style="list-style-type: none"> ■ The dropout rate for children in the poorest fourth of the population rose from 1.3% in 1997 to 7.5% in 1998 for those ages 7–12 and from 14.2% to 25.5% for those ages 13–19. In both cohorts the poorest fifth experienced the largest increase. ■ The share of children in the poorest fourth of the population not enrolled in school rose from 4.9% in 1997 to 10.7% in 1998 for those ages 7–12 and from 42.5% to 58.4% for those ages 13–19. In both cohorts the poorest fourth had the largest increase.

Note: Gross enrollment ratios are used because net ratios were not available. These data should be used with caution.
Source: World Bank 1999cc; IDB Statistical and Social Database; PAHO 1998; Thomas 1999; Frankenberg, Thomas, and Beegle 1999.

Most social indicators either deteriorate or improve at a slower pace during a macroeconomic crisis (table 9.2). Social indicators such as infant mortality rates continued to improve in Latin America in the 1980s, though more slowly than in the previous decade. But health indicators more sensitive to consumption or income downturns worsened. In Chile the share of low-birthweight infants and undernourished children rose as the economy declined. In Mexico infant and preschool mortality caused by nutritional deficiency rose in the 1980s, reversing the trend of the previous decade, and rose again with the economic crisis of 1995. In Argentina and Venezuela the daily per capita intake of protein declined as per capita GDP fell. In Indonesia the share of women whose body mass index is below the level at which risks of illness and death

increase rose by a quarter in 1998, and the average weight of children under age three declined.

School attendance and literacy also take hits during crises. In the Philippines secondary school enrollments increased only 0.9 percent between the 1997/98 and 1998/99 academic years, after growing at an average annual rate of 2.6 percent in the previous five years. In Mexico the proportion of each graduating class that enrolled in the next education level declined during the 1980s debt crisis, particularly among high school and university students. The percentage of age-appropriate children entering primary school also declined. In rural areas the dropout rate rose by 40 percent. In Argentina and Mexico growth in gross primary enrollment slowed in 1995. A study for South India found that children are often taken out of

school in response to adverse shocks.⁹

There is no question that economic crises increase transitory poverty.¹⁰ They can also increase persistent or chronic poverty because of hard-to-reverse effects on the human capital of poor people. While the trends cited for malnutrition, infant mortality, and enrollment are national averages, they most likely reflect a deterioration in these indicators among poor people. For Indonesia, information by income group shows that the dropout rate in the lowest fourth of the income distribution rose from 1.3 percent in 1997 to 7.5 percent in 1998 among children ages 7–12 and from 14.2 percent to 25.5 percent among those ages 13–19. The proportion of poor children not enrolled in school increased from 4.9 percent to 10.7 percent.

Recent research shows a link between macroeconomic downturns and education indicators. The average annual increase in years of schooling in 18 Latin American countries fell from 1.9 years in the 1950s and 1960s to 1.2 in the 1970s and 1980s. Worsening macroeconomic conditions (short-term GDP shocks, volatility, and adverse trade shocks) explain 80 percent of the decline, according to one study.¹¹ As evidence from Mexico shows, the negative “income effect” of falling income tends to outweigh the positive “price effect” of the lower opportunity cost of attending school.¹² Simulation results suggest that the gross secondary enrollment rate in Mexico would have been 11 percentage points higher in 1991 if the economy had grown during the 1980s at half the rate of the 1970s.

Avoiding crises

Clearly, avoiding crises should be a top priority in any anti-poverty strategy. There is wide agreement on the kind of macroeconomic and financial policies governments need to reduce vulnerability to policy-induced crises or adverse external shocks.¹³ They should avoid profligate fiscal and monetary policies, overvalued exchange rates, and unsustainable current account deficits—all problems in the 1970s and 1980s.

Many parts of the world have made great progress in steering away from irresponsible fiscal policy. Leading examples are the large economies in Latin America and some of the transition economies, where the ensuing fall in inflation rates has helped build investor confidence and reduced, if not eliminated, the potential long-term effects of inflation on efficiency and growth.¹⁴ Lower inflation has also helped reduce poverty, since high inflation often hurts the poor more than the nonpoor. In Argentina, for

example, ending hyperinflation brought about a significant one-time drop in the incidence of poverty: in Greater Buenos Aires the incidence of poverty dropped from 34.6 percent in 1989 to 22.6 percent in 1991.¹⁵

The 1990s saw various types of crises, triggered by weak banking systems and weak financial regulation in a world of large and volatile international capital flows. Liberalizing the financial sector was expected to put economies on a more stable footing. But the transition from more repressed to more open financial systems in the developing world has been difficult to manage. Banking crises have been more numerous in the past two decades, when stroke-of-the-pen financial liberalization became popular.¹⁶

Some of the reforms introduced in the financial sector backfired because the institutional rules allowed excessively risky behavior while the costs of that behavior had to be paid by society as a whole. A vivid example is the Mexican financial crisis of 1995.¹⁷ At the root of the crisis was a weak banking system, its fragility traced to the privatization process used for the banks, some aspects of the financial liberalization program, and weak regulatory institutions. Rescuing the banking sector will cost Mexican taxpayers an amount equal to about 20 percent of GDP (in present value terms).

To prevent financial crises, governments need to improve the prudential regulation and supervision of financial intermediaries, introduce new standards for data dissemination, and implement corporate bankruptcy reform.¹⁸ These measures are already under way in many developing countries, but there is still a long way to go. At the same time, a cautious approach should be taken to capital account liberalization. Controls on capital inflows—such as those Chile used until recently—can be an appropriate instrument for tempering the volatility of capital flows. There is evidence that capital controls can shift the composition of capital flows toward longer-maturing investments.¹⁹

Other initiatives and measures are also important for avoiding crises, such as mechanisms to diversify and insure against risk. Some governments, such as Chile, self-insure using fiscal stabilization funds. Others, such as Argentina, negotiate contingent credit lines between the central bank and private international financial institutions to ensure access to foreign currency in the event of a sudden slowdown in capital inflows.²⁰

However, actions at the national level may not be enough to prevent economywide crises. Domestic actions

will have to be complemented by actions at the international level to foster global financial stability (chapter 10) and help countries, particularly the poorest and the smallest, manage commodity price shocks.

Formulating a crisis response that protects poor people

No matter how skillful the economic management, crises are likely to affect the developing world and transition economies for some time to come. That is why articulating a response to crises must take into consideration its impact on poor people. A poverty-sensitive response to crisis should steer toward:

- Helping poor households maintain their consumption.
- Ensuring that poor people do not lose whatever access they have to basic social services.
- Preventing permanent reversals in the accumulation of human and physical capital.
- Averting self-defeating behavior, such as criminal activity, prostitution, and exploitative forms of child labor.

A poverty-sensitive response should also provide mechanisms for those at risk of becoming poor as a result of the crisis.

What does it take to protect those who are already poor and those at risk of becoming so from sharp declines in short-term income? Appropriate macroeconomic responses and well-functioning safety nets can enhance equity and result in better growth outcomes. Some of the recommendations here are already being incorporated in the standard approach for dealing with crises. The Republic of Korea, for example, introduced or expanded safety nets relatively quickly in the wake of the 1997 financial crisis (box 9.1). But in general the response continues to be ad hoc—with measures thrown together in the heat of a crisis.

Adopting the right macroeconomic policy mix. Responding with the right macroeconomic policy mix after an adverse shock is one of the biggest challenges policy-makers face. Driven by political considerations, policy-makers may postpone needed adjustment and stabilization measures because they are painful—making the situation far worse. Peru was an extreme case in the 1980s. The government refused to implement an adjustment program and in July 1985 announced a cap on external debt payments (a de facto unilateral moratorium) equal to 10 percent of exports. Peru did well for a while, but the disequilibria continued to mount and in 1988 the econ-

omy crashed, with per capita GNP falling by 13.4 percent and real wages by 40.6 percent. Altogether, real wages fell by 67 percent between 1988 and 1990.²¹

The 1997 crisis in Thailand shows what happens when there are no corrective measures to address the buildup of vulnerability.²² True, the financial panic of domestic and international investors suddenly concerned about the fate of their portfolios lit the fuse for the explosion. But the buildup of structural vulnerabilities provided the dynamite—sharply rising short-term debt that far exceeded international reserves, a financial sector that had done a poor job of intermediating capital inflows and found itself saddled with hugely mismatched assets and liabilities, and corporations that were massively overleveraged and exposed to interest and exchange rate fluctuations.

Not all problems arise from a failure to adjust to an adverse shock or from unsound macroeconomic policies. In some cases the policy response errs in the direction of too much adjustment, with fiscal and monetary policy more restrictive than necessary to restore equilibrium in the currency market, the current account, or the capital account. Overreaction can cause more pain than necessary and in some circumstances can be self-defeating. An initial overreaction on the fiscal front can lead to a higher fiscal deficit down the road because the larger-than-expected recession lowers government revenues, defeating the purpose of the initial austerity measures. The reason for overshooting often is that cautious policy-makers prefer to err on the side of excessive adjustment, since timid adjustment can be far more devastating.

Although it may be hard to tell whether a policy package is excessively restrictive, there are some indications that those in place in East Asia during the recent crisis were just that. In Thailand the tax increase in September 1997 made the ensuing recession worse. In Korea the restrictive fiscal policy initially made room for the expected costs of bank restructuring. But the fiscal target was subsequently relaxed as both the authorities and the international financial institutions recognized that it was unrealistic in light of the larger-than-expected slowdown in growth. Aiming toward the original target in the face of worsening economic conditions would have been self-defeating. And for Malaysia and the Philippines the trend of cyclically adjusted deficits (for both revenues and expenditures) suggests that they did not relax their fiscal policy, even though the actual deficit made it look as though they had.

Even if excessively restrictive policies are later corrected, the short-term costs can be significant, particu-

Box 9.1**Providing social protection in response to crisis in the Republic of Korea**

The Republic of Korea was making sustained progress in reducing poverty in the 1990s: the urban poverty rate fell an average 20 percent a year during 1990–97, and there were no increases in inequality. But then economic crisis struck, sharply increasing unemployment and poverty. The incidence of poverty in urban areas doubled from 9 percent in 1997 to 19.2 percent in 1998.¹ Unemployment rose from 2.6 percent in the second quarter of 1997 to a peak of 8.7 percent in early 1999. Real wages declined 20.7 percent. Most of the newly unemployed were low-paid workers: in December 1998 three-quarters were temporary, daily, self-employed, or unpaid family workers, and about 20 percent were the head of a household with no other income earners.

Expansionary fiscal policies in 1998 and 1999 were critical in stemming the economic downturn. Social protection spending was increased threefold—from 0.6 percent in 1997 to 2.0 percent in 1999. The government used three main instruments of social protection to help the unemployed, the poor, and the elderly:

- *Unemployment insurance.* Korea expanded its nascent unemployment insurance program—the only such program among the East Asian crisis countries—from firms with more than 30 employees to all firms. It also included temporary and daily workers, shortened the contribution period required for eligibility, and extended the duration of unemployment benefits. This expanded the eligible workforce from 5.7 million workers at the beginning of 1998 to 8.7 million at the end of the year. Beneficiaries increased tenfold—from around 18,000

in January 1998 to 174,000 in March 1999, still only 10 percent of the unemployed workforce.

- *Public work.* Since most of Korea's jobless did not benefit from the expansion of unemployment insurance, the government introduced a temporary public work program in May 1998, enrolling 76,000 workers. By January 1999 the program was providing 437,000 jobs, though the number of applicants was higher still, at 650,000. By the first quarter of 1999 the public work program was benefiting around 2.5 times as many people as the unemployment insurance program.

- *Livelihood protection.* In May 1998 the government introduced a temporary livelihood protection program, with funding to cover 750,000 beneficiaries. It also introduced a means-tested noncontributory social pension for 600,000 elderly people.

Although the government's social protection response was quite exemplary, public spending on health and education did not increase in line with the overall budget, and real spending either fell or remained constant. But even within the smaller envelope for health, spending on primary care was protected.

The government is now focusing on consolidating social safety nets, reducing income disparities, and creating the basis for a competitive and knowledge-based economy. Policies to achieve these objectives include a law guaranteeing a minimum standard of living, to take effect in October 2000. The law will entitle all Koreans living under the poverty line to receive income support for living, education, and housing expenses. Nearly 2 million poor people are expected to benefit, four times the current number.

1. The poverty rates were calculated using seasonally adjusted expenditure data and a national poverty line equivalent to about \$8 a day (in 1993 PPP dollars).

Source: World Bank 1999w, 2000d.

larly for poor people. If there are vicious cycles of poverty, low education, and poor health, a recession can cause permanent damage for the poor.

Do the macroeconomic responses to crises that are best for the overall output levels of the economy differ from those that would be best for the incomes of poor people? Perhaps. Different policy combinations imply different costs for the poor than for the nonpoor because of the way the reduction in per capita output is distributed.²³ But even if distributive outcomes were the same, the poor and the nonpoor could well prefer different policy packages.²⁴

Poor people are more likely to prefer an adjustment that leads to the smallest drop in GDP at any point in time even if it implies a slower recovery. Nonpoor people are more likely to prefer a program that reduces income more severely in the short run but yields higher growth in the medium run. This difference results simply from the fact that the welfare losses from an economic downturn are

higher for poor people. Moreover, because poor people live close to the subsistence level, their preference may reflect application of the safety principle (minimizing the probability that their income will fall below a certain level). Or the poor and nonpoor may discount future consumption differently, with the poor putting a larger premium on present consumption than the nonpoor.

The distributive and intertemporal implications of alternative adjustment policies are important, but policymakers rarely have the luxury of choosing among different adjustment paths. In general, the optimal combination of policies—to achieve the necessary balance of payments adjustment with the smallest decline in output—depends on initial conditions.²⁵ When a currency is under speculative attack, a spike in interest rates will in most cases be needed to stop the attack. But when a country introduces adjustment measures early on, the government may have more freedom to choose among different policy combinations and thus be more likely to manage a soft

landing. Unfortunately, macroeconomic analysis in its current state can offer little guidance in assessing the distributive and intertemporal implications of alternative policy packages, clearly an area in need of far more analytical and applied research.

Protecting spending that benefits poor people. How governments raise revenues and cut public (nondebt) spending has important policy implications for who bears the burden of adjustment and whether poor people are protected.²⁶ To design a poverty-sensitive fiscal adjustment to avoid or respond to a crisis, policymakers need to assess the distributional effects of spending programs. A useful tool for this is the public expenditure review (box 9.2).

As a general rule, areas important for poor people—basic education, preventive health care, water and sanitation, rural infrastructure—should be protected from budget cuts to ensure that services are adequate. That means ensuring that schools and health posts in poor areas have at least the basic minimum of supplies. General subsidies on food staples might need to be maintained in the short run—even if the benefits leak to the nonpoor—unless they can be effectively replaced by targeted programs. Safety nets and social assistance programs targeted

to poor people should be protected if not expanded.

It may seem obvious that governments should protect spending that benefits poor people and expand the safety net programs targeted to them. But this does not necessarily happen in practice. Recent research in some countries in Latin America has found that a 1 percent decline in per capita GDP leads to an estimated 2–3 percent decline in targeted public spending per poor person.²⁷ And a study on the Argentine employment program *Trabajador* found that its performance in reaching poor people deteriorated sharply with cuts to its budget.²⁸

There may be several reasons for such “antipoor” patterns in fiscal adjustment. Without budgetary guidelines to direct fiscal austerity, governments may go for proportional cuts to minimize bureaucratic infighting and ease acceptance by the legislature. Another reason may be that governments lack the instruments to target resources to the poor—instruments that are difficult to put in place in the heat of a crisis. Even if the instruments exist, political forces may be such that the resources going to poor people are cut more than proportionately. In some countries information can be the major constraint: governments may lack reliable records of their budget or programs.

What can be done to counter these factors? One way to protect spending that benefits poor households is for the government and legislature to rank current programs by their importance as part of the budget approval process. When spending cuts are needed, the order of the cuts would be determined by the priority assigned to each program. Government agencies could be required to evaluate social programs to help policymakers identify those that are most cost-effective in reducing poverty and therefore should be protected during a crisis.

Peru has introduced guidelines for protecting programs that benefit poor people as part of its public finance reform law (box 9.3). The guidelines combine fiscal rules with measures to increase fiscal transparency and accountability. The program creates a stabilization fund with the proviso that programs benefiting poor people should be protected. Although such budget protocols may not be classified as antipoverty programs, they can have an important effect on poverty by protecting pro-poor spending during fiscal retrenchment.

If benefits targeted to poor people are cut for political economy reasons, a third party—such as the multilateral lending organizations—could advocate for the poor and help governments implementing austerity measures design a viable way to protect programs and spend-

Box 9.2 **Public expenditure reviews to assess the impact of fiscal retrenchment on poor people**

Public expenditure reviews—assessments of public sector issues that focus on the efficiency and rationale of the public budget—could be useful tools for evaluating the impact of fiscal adjustment programs and public sector reforms on social programs and safety nets. In economywide crises that lead to spending cuts, these reviews could help establish a transparent budget mechanism for rationalizing, allocating, executing, and managing public spending to protect poor people and ensure private sector efficiency.

Public expenditure reviews typically analyze and project public revenues and determine the level and composition of public spending, assessing the allocation of resources among and within sectors. When planning fiscal retrenchment, a short review should be done, focusing on the sectors that account for the bulk of the public budget (agriculture, education, health, infrastructure). The review should rank expenditures on social programs, considering the tradeoff between these programs and other nonessential spending (such as military spending) that could be minimized during a crisis. This type of adjustment is clearly more efficient in protecting vulnerable groups and maintaining private sector efficiency than the typical uniform spending cut.

Source: World Bank 1999v.

ing that benefit the poor. This happened to some degree in several countries in the 1990s.

Changes in the incentive system embedded in targeted programs could also facilitate cuts for nonpoor beneficiaries during periods of austerity. The argument is this: it is often said that for political economy reasons some of the benefits of targeted programs have to go to the nonpoor—through “leakage”—to ensure continuing support for programs. The same forces will presumably act to limit the welfare losses to the nonpoor from cuts.

Box 9.3 Protecting poor people during fiscal adjustment: Peru’s Fiscal Prudence and Transparency Law

Peru’s Fiscal Prudence and Transparency Law, overwhelmingly approved by the national congress in 1999, does much to ensure that social protection is maintained during a fiscal adjustment.

First, the law established fiscal rules on the maximum annual deficit of the consolidated public sector, capping it at 2 percent of GDP in 2000, 1.5 percent in 2001, and 1 percent thereafter. (The consolidated public sector includes the central and regional governments, decentralized agencies, and national public enterprises; it excludes local governments and their agencies and enterprises.) In the event of a national emergency, international crisis, or fall in GDP, the fiscal deficit can increase to 2 percent of GDP. The law also set limits on increases in public spending and debt. The maximum annual growth of nonfinancial public spending is equivalent to the inflation rate plus 2 percentage points, implying a future reduction in the relative size of the public sector.

Second, the law created a fiscal stabilization fund, to be funded from three sources: the revenues above the average collected during the previous three years, three-fourths of future privatization proceeds, and half of all revenues from future concessions. (Savings accumulated in the fund in excess of 3 percent of GDP will be transferred to the public pension fund or used to reduce public debt.) Up to 40 percent of the fund’s resources can be used in a given year if current revenues fall below the average collected over the previous three years. Fund resources can also be used in emergencies, such as an economic crisis or a natural disaster.

Third, the law mandates that the fund’s spending on targeted poverty reduction programs be given priority over spending on other programs.

To enhance fiscal transparency, the law introduced a three-year fiscal framework to be developed, approved, and published by the government. And to improve fiscal accountability, it requires that the finance minister submit to congress and publish annual reports assessing the execution of the fiscal goals in the multiyear framework.

Source: Ruprah 1999.

One way to avoid this political economy constraint is to design programs with low marginal benefits or high marginal costs for the nonpoor.²⁹

Evaluating different types of spending can be difficult when data are poor, the case in most developing countries. Efficiency indicators are almost nonexistent, and data on actual spending, as opposed to budgeted amounts, are available only after long lags. Usually an evaluation should take the available intermediate information and complement it to determine whether public resources reach the intended beneficiaries effectively. A social monitoring and early response unit, such as the one set up in Indonesia during its recent crisis, can help ensure quick and reliable information for evaluating spending in specific social programs.³⁰ Where field surveys are infeasible (because of budget or time constraints), recent household surveys can be used to try to determine an efficient and rational allocation of government resources among social programs and safety nets.

Putting safety nets in place before a crisis. If the problem is a lack of instruments for protecting poor people, the solution is to introduce, during normal times, safety net programs that can operate as insurance in times of economic distress. Safety nets are important for several reasons. They can play a crucial role in mitigating the effects of crises on the poor and protecting the near-poor from falling into poverty. A study estimated that if the targeted program Progresca (see box 5.5 in chapter 5) had existed when the 1995 crisis hit Mexico, the poverty gap index in rural areas and the squared poverty gap index (which gives greater weight to the poverty of the poorest)³¹ would have declined by 17 percent and 23 percent in the year after the crisis.³² Safety nets can also help prevent irreversible damage to the human capital of poor people. And they can aid political acceptance of stabilization and reforms, preventing conflicts over resource distribution that can create stalemates, deepen economic crises, even cause governments to fall. Recent work has shown that institutional weaknesses, including lack of safety nets, have been responsible for many crises over the past 25 years.³³

Most developing countries lack effective safety nets that protect poor people from the output, employment, and price risks associated with systemic adverse shocks. When these mechanisms are not in place before a crisis occurs, policymakers are often forced to improvise or to use programs designed for other purposes and other beneficiaries. Emergency responses to emergency situations are often prepared without technical analysis to identify the

groups most vulnerable to the shocks and to evaluate the cost-effectiveness of different social protection options. Programs put in place and operating—even on a small scale—before crises hit do better at protecting poor people than ad hoc emergency measures.

To be effective, safety nets should include a wide range of programs—public work programs, scholarships for poor children, cash transfers, food-related transfers, food subsidies, social funds, and fee waivers for essential services (chapter 8). Social programs that focus on long-term development (for example, such targeted human development programs as Mexico's Progresá) can also perform a safety net function during economic downturns. The appropriate mix of safety net programs will depend on the characteristics of the poor and vulnerable, the type of crisis, and the government's institutional and administrative capacity.

The international community can play an important part by providing policy advice, contributing financial support, and helping policymakers design and fund safety nets. International financial institutions can help countries design pro-poor fiscal adjustment programs and safety nets and, for countries too poor to fund a safety net during a crisis, can provide financing.³⁴

Reducing vulnerability to natural disasters

The biggest shock we ever had was Hurricane Gilbert; . . . all what we found after Gilbert was one wooden chair.

—Woman, Millbank, Jamaica

Economic development is repeatedly interrupted by natural disasters—by earthquakes, droughts, floods, landslides, volcanic eruptions, windstorms, forest fires. Like economic crises, natural disasters can cause sharp increases in poverty and slow the pace of human development. And like economic crises, they hurt poor people in the short run and diminish their chances of escaping poverty in the longer run.

The damage to agriculture and infrastructure varies by type and intensity of natural disasters, as do the implications for their indirect and secondary impacts. Droughts, for example, can result in heavy crop and livestock losses while leaving infrastructure and productive capacity largely unaffected.

Between 1988 and 1997 natural disasters claimed an estimated 50,000 lives a year and caused damage valued at more than \$60 billion a year.³⁵ Dramatic as these fig-

ures are, the full human and economic costs are even greater. Human costs include injuries and temporary and permanent disabilities, temporary and permanent displacement of people, the breakup of families and social networks, increased poverty and disease, and psychological scars. Economic costs, based largely on direct physical impacts or losses of fixed capital and inventory, are also underestimated. Many indirect and secondary effects on economic activity—such as changes in fiscal policies, the long-term consequences of the reallocation of investment resources, or the losses in human capital—go unrecorded.

Over the past 10 years the incidence of natural disasters has increased.³⁶ This could be due in part to social factors, as settlements have sprung up in hazardous areas. The urban poor in megacities—for example, in Rio de Janeiro and its *favelas*—are often forced to build on steep, marginal land prone to landslides that kill or leave homeless thousands of people every year. But there are also natural factors. The El Niño events, associated with anomalous floods, droughts, and storms, are getting larger and more frequent.³⁷ And warming of the surface of the Atlantic is increasing the frequency and severity of hurricanes.³⁸ Still, it is often asked whether it would be more correct to label many of these disasters as “human-made” rather than “natural.” They are probably both.

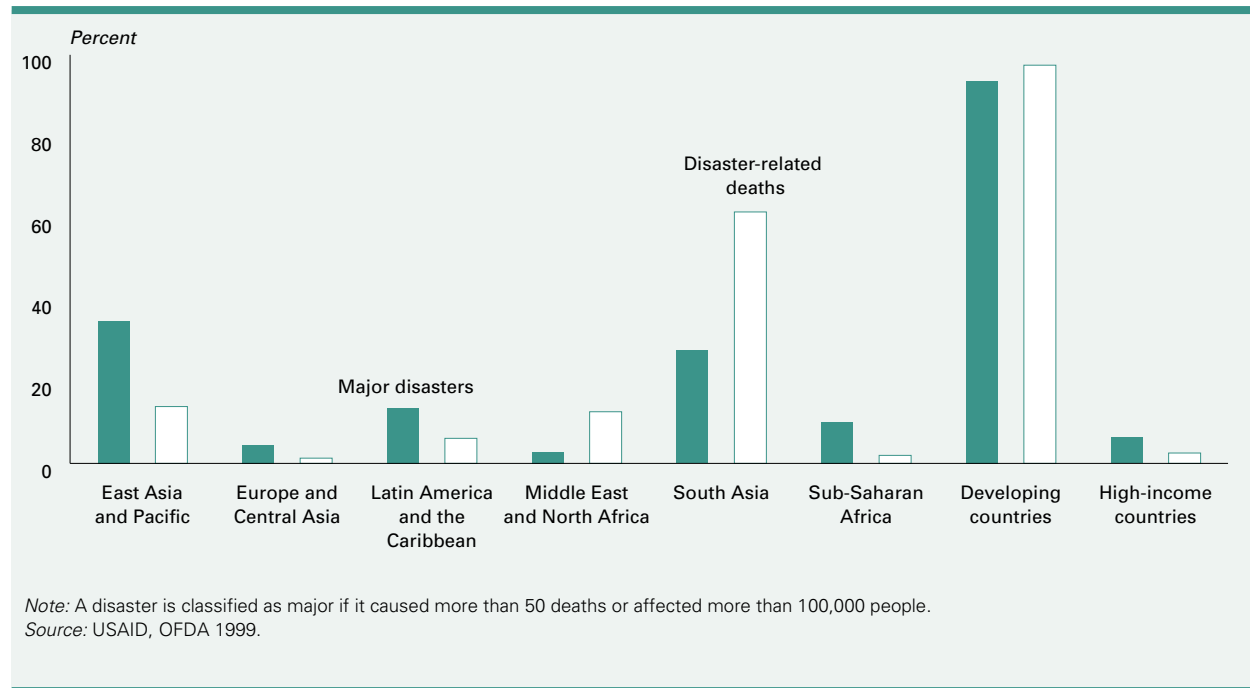
Impact of natural disasters on poor countries and poor people

Unfortunately for me, the land on which I made my farm was a swampy area and when it rained the whole farm submerged with water and was destroyed.

—Elderly man, Atonsu Bokro, Ghana

Developing countries, especially their most densely populated regions, suffer the brunt of natural disasters. Between 1990 and 1998, 94 percent of the world's 568 major natural disasters and more than 97 percent of all natural disaster-related deaths were in developing countries (figure 9.1). In Bangladesh alone three storms, four floods, one tsunami, and two cyclones killed more than 400,000 people and affected another 42 million. In southern Africa in 1991–92, Malawi, South Africa, Zambia, and Zimbabwe experienced severe droughts.³⁹ In Latin America and the Caribbean major natural disasters associated with El Niño, Hurricane Mitch, Hurricane Georges, and the Quindío earthquake in Colombia claimed thousands of lives and caused billions of dollars of damage between

Figure 9.1
Developing countries bore the brunt of natural disasters in 1990–98



1995 and 1998.⁴⁰ In 1998 severe flooding of the Yangtze River caused devastation in China, and a large earthquake occurred in Armenia. Another long series of disasters struck in 1999—a major earthquake in Turkey, a cyclone in Orissa, India, floods in central Vietnam, torrential rains and catastrophic mudslides in parts of Venezuela, floods in Mozambique. The list goes on.

Poverty and lagging development amplify the adverse effects of natural disasters. Developing countries are particularly vulnerable, because they have limited capacity to prevent and absorb these effects. People in low-income countries are four times as likely as people in high-income countries to die in a natural disaster.⁴¹ Despite similar patterns of natural disasters in Peru and Japan, fatalities average 2,900 a year in Peru but just 63 in Japan.⁴² Average costs as a proportion of GDP are 20 percent higher in developing countries than in industrial economies.⁴³

Poor people and poor communities are frequently the primary victims of natural disasters, in part because they are priced out of the more disaster-proof areas and live in crowded, makeshift houses.⁴⁴ The incidence of disasters tends to be higher in poor communities, which are more likely to be in areas vulnerable to bad weather or seismic activity. And there is evidence that the low qual-

ity of infrastructure in poor communities increases their vulnerability.

While natural disasters hurt everyone affected by them, poor families are hit particularly hard because injury, disability, and loss of life directly affect their main asset, their labor. Disasters also destroy poor households' natural, physical, and social assets, and disrupt social assistance programs.⁴⁵ Long-term disabilities and the destruction of assets can trap families in chronic poverty. Malnutrition impairs children's ability to learn.

The few studies that have analyzed the impact of natural disasters on poverty show that the harm to current and future living standards can be significant. In Ecuador El Niño may have increased the incidence of poverty in affected areas by more than 10 percentage points.⁴⁶ In Honduras Hurricane Mitch caused an estimated 7 percent decline in agricultural output in 1998.⁴⁷ Loss of crops was extensive, affecting a quarter to a half of households. Rural households, most dependent on agriculture, lost the most.⁴⁸

In the 1984 drought in Burkina Faso the income of the poorest third of the rural population fell 50 percent in the Sahelian zone, the poorest agroclimate, and 7 percent in the Sudanian zone.⁴⁹ There was also evidence that poor people sold livestock out of desperation. Because they

had very small stocks of animals to begin with, these distress sales may have dangerously depleted their buffer stocks, leaving them extremely vulnerable to future drought and other shocks and possibly trapping them permanently in dire poverty.⁵⁰

Studies of the impact of the 1994–95 drought in Zimbabwe found that women and young children were the most affected. For women, the drought's effect on health (as measured by body mass) was temporary. With good rains the following year, they regained much of the lost body mass. But for children ages 12–24 months the drought will probably have a permanent effect. These young children lost an average 1.5–2.0 centimeters of linear growth in the aftermath of the drought. The impact was most severe among children in households with little livestock, the principal asset of these households for smoothing consumption.⁵¹ The drought had no impact on men's health.

On balance, female-headed households fare worse than male-headed households following a natural disaster, in part because of their smaller average resource base.⁵² Customary or formal laws can make this worse. Among the Tonga of Zambia, for example, a widow has no entitlement to any of the household's possessions.⁵³

The effect of a natural disaster on poverty can go well beyond the households directly affected. Research on Sub-Saharan Africa suggests that both agricultural and overall GDP are sensitive to downward fluctuations in rainfall. The 1991–92 drought in southern Africa slowed growth in agricultural and total output in Malawi, South Africa, Zambia, and Zimbabwe.⁵⁴ The impact of drought shocks on GDP and the recovery time depend in part on the economic importance of the agricultural sector and its integration and links with industry. The second-round and subsequent effects are more pronounced in more integrated economies. In Senegal and Zimbabwe the effect of droughts spilled over from agriculture to manufacturing.⁵⁵ The value of Zimbabwe's manufacturing output declined 9.5 percent in 1992, largely as a result of the 1991–92 drought, and export receipts from manufactures declined 6 percent.⁵⁶

The destruction of infrastructure by catastrophic natural disasters also has both immediate implications and longer-term, second-round poverty effects. In Asia, for example, where 70 percent of the world's floods occur, the average annual cost of floods over the past decade was estimated at \$15 billion, with infrastructure losses accounting for 65 percent.⁵⁷

The need to replace damaged infrastructure in disaster-stricken countries diverts government resources from longer-term development objectives and consumes a significant share of multinational lending resources. In Mexico as much as 30 percent of the funds approved by the World Bank for improving rural water supply over the past decade have been diverted to postdisaster rehabilitation.⁵⁸

Risk reduction and mitigation: lessening vulnerability to disasters

Cumulative experience with natural disasters points to an urgent need to move from fatalism to prevention, from response to preparation, from mobilizing resources after the fact to reducing and transferring risk before the fact. There is a distinct difference in approach to emergency management between many developing and developed countries. Developing countries emphasize preparedness and response—making sure that the resources to respond to emergencies are available and ready for dispatch and then that they are dispatched quickly and used efficiently after an emergency has occurred. Developed countries increasingly emphasize reducing or mitigating the impacts of disasters (box 9.4).

Disaster reduction and mitigation can lessen the disruption caused by natural disasters, save lives, and protect property. From a purely economic point of view, investing in risk reduction pays off. For example, a cost-benefit analysis for eight cities in the Argentina Flood Rehabilitation Project found an internal economic rate of return of 35 percent. The estimated \$187 million (1993 dollars) in avoided damages from the 1997 flood more than covered the \$153 million in investment. By installing flood control dams and improving drainage, the Rio Flood Reconstruction and Prevention Project reduced total floodable areas by 40 percent, achieving an estimated 6.5 benefit-cost ratio for seven subbasins of the Iguazu and Sarapui Rivers.⁵⁹ Comprehensive disaster risk management can be integrated into development investment decisions. In Turkey international lenders and donors worked with the government to develop a new disaster management framework in the aftermath of the 1999 earthquakes (box 9.5).

Resettlement—tailored to the needs of poor people—is often the appropriate risk reduction strategy in flood-prone or volcanic areas. Where resettlement is not feasible or desirable, neighborhood improvement programs are an

Box 9.4 Mitigation is the cornerstone of emergency management in the United States

Mitigation—the ongoing effort to lessen the impact disasters have on people and property—is the cornerstone of emergency management in the United States. It involves keeping homes away from floodplains, engineering bridges to withstand earthquakes, creating and enforcing effective building codes to protect property from hurricanes, and more.

Over the past 10 years the U.S. Federal Emergency Management Agency (FEMA) has spent \$25 billion to help people repair and rebuild communities after natural disasters. Other government agencies and insurance companies have responded with billions of dollars more. Beyond this, the costs of emergencies also include lost lives, jobs, and business opportunities. A big emergency can reduce local GDP by as much as 10 percent.

In 1995 the high and escalating costs of emergencies led FEMA to adopt a national mitigation strategy, with two goals: to protect people and structures from disasters and to minimize the costs of disaster response and recovery. FEMA estimates that every dollar spent on mitigation saves two in response and recovery.

The strategy promotes a community-based approach to reducing vulnerability to natural hazards:

- Altering the hazard (seeding clouds during a drought).
- Averting the hazard (building dams to control floodwaters).
- Avoiding the hazard (moving parts of communities out of floodplains).
- Adapting to the hazard (constructing earthquake-proof buildings).

In February 2000 FEMA announced Project Impact: Building Disaster-Resistant Communities, a project to provide expertise and technical assistance to about 200 communities striving to become disaster resistant. Three principles drive the project: Preventive actions must be decided at the local level. Private sector participation is vital. Long-term efforts and investments in prevention are essential.

Source: Olsson 2000.

Box 9.5 Mitigating the risks of natural catastrophes: lessons from the 1999 earthquakes in Turkey

A powerful earthquake shook northwestern Turkey in the summer of 1999, killing more than 17,000 people, injuring tens of thousands, and razing several population centers. Three months later a second quake hit, raising the number of victims and the social and economic losses. Industry and businesses in the areas hit by the quakes had contributed more than 35 percent of the country's GDP. Their destruction is likely to affect growth in Turkey for many years to come.

The international community assisted Turkey in relief and immediate recovery efforts. In partnership with the Turkish government, the European Investment Bank, the Council of Europe's Social Development Fund, and other donors, the World Bank coordinated the preparation of a framework for a \$1.7 billion reconstruction program. A crucial part of the framework is a disaster management and response system to prevent similar losses in the future.

Disaster and land development laws will be reviewed and modified, and the capacity of municipalities to regulate, plan, and implement disaster-resistant development will be strengthened. Pilot projects in selected municipalities will help planning and building departments develop risk-based municipal master plans, means for effective implementation of building codes, municipal regulations to ensure that builders follow appropriate licensing procedures, and programs for evaluating existing buildings.

The government's earthquake insurance program will expand its catastrophic risk management and risk transfer capabilities. The program will create an insurance mechanism to make funds readily available to owners (those paying real estate taxes) who need to repair or replace a dwelling destroyed or damaged by an earthquake. It will also ensure the financial solvency of the insurance pool after all but the most catastrophic events and reduce the government's financial dependence on donors following major earthquakes.

Source: Kreimer 1999.

alternative. In these programs residents of low-income urban areas improve their houses themselves or with community help. The programs reduce building code violations by training informal sector construction workers in mitigation techniques and by providing finance for low-cost improvements that bring housing to stipulated standards. International assistance, channeled through local NGOs, has often helped turn housing reconstruction efforts into low-cost opportunities for mitigating risks in future disasters (box 9.6). Other important neighborhood upgrading activities include constructing drainage works and reducing the risk of flooding and mudslides.

Low-cost local initiatives can also reduce the vulnerability of communities' income to natural disasters. In rural areas such initiatives might focus on environmental conservation and reforestation. For places prone to droughts and floods, community food banks can help. In Burkina Faso local cereal banks were introduced to improve storage, lower food prices, and stabilize them over the year, including during the drought season.⁶⁰ Community agricultural cooperatives can help small farmers obtain credit or crop insurance. And various strategies can help diversify the economic activities within a community.

Box 9.6 Turning reconstruction into risk mitigation with the help of a local NGO

In a poor area of Peru partly destroyed by an earthquake in 1990, Caritas, a local NGO, initiated a reconstruction program that was also designed to mitigate earthquake-related risks. After consulting with the community, Caritas decided to construct housing from *quincha*, a local material capable of withstanding earthquakes. To directly assist the neediest families, such as households headed by women, Caritas provided materials in exchange for participation in communal work. An earthquake in 1991 showed the advantage of using *quincha*: most houses resisted the earthquake, which registered 6.2 on the Richter scale.

Source: Schilderman 1993.

Reducing economic vulnerability also involves encouraging—or mandating—the purchase of private insurance for those who can afford it and identifying mechanisms for transferring risk, such as catastrophic reinsurance and catastrophe bonds (box 9.7). While risk transfer mechanisms can efficiently cover much of the cost of repairing and rebuilding infrastructure, freeing up scarce government resources, they may not be easy to apply in poor countries. For one thing, they require systems for verifying damage that cannot be easily manipulated by those (governments, for example) who would collect the insurance benefits. To deal with this problem in floods, for example, a country could establish a high-quality measuring and reporting system. This would facilitate insurance contracts that link payment schedules to a rainfall index.⁶¹

Coping with natural disasters

In the emergency phase following a disaster, efforts should focus on providing food, water, shelter, and medicine. That makes temporary repair of such infrastructure as roads and water supply critical. Priorities need to be based on the magnitude of damages and level of vulnerability. The most vulnerable groups—women, children, and the elderly—need special attention. Involving women in the management of shelters, establishing workfare programs adapted to women's needs, and ensuring gender neutrality in housing acquisition can improve recovery for women and households headed by women. Expanding early childhood development programs, particularly mother and child feeding programs, is also important. Rebuilding schools should be a top priority—to avoid loss

Box 9.7 Mitigating risk with catastrophe bonds

Catastrophe bonds—or cat bonds—offer an alternative to insurance in countries lacking active private insurance markets. A before-the-fact risk transfer mechanism, cat bonds provide financial protection against disaster losses.

Consider a government that wants protection against the risk of flood damage to one of its water treatment plants in the next year. Experts estimate the chance of a flood at 1 in 100, a risk low enough to induce an institutional investor to purchase a cat bond whose payoff is tied to flood damage to the treatment plant. The investor buys the bond at the beginning of the risk period at par. At the end of the risk period the investor loses the entire principal if the water treatment plant is damaged. But if no damage occurs, the investor recovers the principal plus interest, normally above the market rate to reflect the risk of losing the principal.

The government invests the funds, which will be used only if a catastrophe occurs, in risk-free securities. The cost to the government is equal to the difference between the interest rate it receives from the risk-free securities and the interest rate it pays the bondholder—a cost analogous to paying an insurance premium. The value of the bond—and the government's interest payments—would be lower if the government flood-proofs the treatment plant. So, besides performing an insurance function, the cat bond gives the government an incentive to invest in mitigation efforts.

A potential problem with catastrophe bonds is the difficulty of verifying damage. The public agency operating the water treatment plant might exaggerate damage to ensure that the bondholder pays. One way to deal with this moral hazard is to tie payouts to an objective index (such as flood height) rather than to actual damage.

Source: Kunreuther 1999.

of human capital and perhaps to provide shelter for displaced people. Cash transfers to poor families reduce the likelihood that they will need to pull their children out of school. Where children need to participate in recovery efforts, schools can adopt flexible schedules.

Following a widespread natural disaster, national and local governments need to establish a macroeconomic management scheme to tackle fiscal and current account effects—lower tax revenues and higher public spending, lower exports and higher imports. A calamity fund like that in Mexico can improve governments' ability to cover the costs of coping with natural disasters (box 9.8). Calamity funds should focus on absorbing the catastrophic risks that cannot be absorbed by third parties, such as disaster-related damage affecting farmers and urban dwellers unable to afford private

Box 9.8 Sharing the costs of catastrophes: the Mexican fund for natural disasters

With tremendous diversity in geography and climate, Mexico is susceptible to a wide range of natural disasters—floods, droughts, earthquakes, wildfires, tropical cyclones, volcanic eruptions. Since 1980 direct damage from natural disasters has totaled some \$6.5 billion, and about 7,000 people have lost their lives.

In 1996, to help reduce the country's vulnerability to natural disasters, the government established Fonden (Fondo para desastres naturales, or Fund for Natural Disasters). This federal fund was to be financier of last resort for emergency response equipment, disaster relief activities, and reconstruction of public infrastructure and protected areas.

In 1998, following a period of particularly heavy losses from natural disasters, the government decided to use Fonden more strategically, to provide incentives for insurance use and disaster mitigation. After broad consultation with stakeholders, in March 1999 the government changed Fonden's operating guidelines to:

- Increase clarity and transparency in the decision rules for granting access to the fund and in loss assessment processes.
- Limit moral hazard by encouraging greater use of private insurance by Fonden's beneficiaries and establishing clear cost-sharing formulas for financing disaster losses falling under the responsibility of state and municipal governments.
- Encourage mitigation in the reconstruction programs financed by Fonden and in beneficiaries' regular investment programs.
- Refinance disaster response activities initially financed through emergency liquidity facilities to speed disaster recovery.

These changes are being formalized through voluntary agreements between the federal government and the state governments that set out the parties' rights and responsibilities, Fonden's rules, and agreed cost-sharing formulas for disaster relief and reconstruction activities. The agreements will also lead to the establishment of trusts between the federal government and each state. Under the terms of each trust, spending decisions and contracting of eligible emergency activities will be carried out by a technical committee consisting of state and municipal representatives, acting on advice from federal entities.

If successful, these measures will increase transparency, accountability, and efficiency in the use of Fonden's resources and redistribute the costs of natural disasters between government and the private sector. Over time they will also reduce the share of costs borne by the federal government for mitigating and coping with disasters.

Source: Barham 2000.

insurance, and providing social assistance to poor disaster victims.

In the aftermath of a natural disaster targeted international assistance can help maintain macroeconomic stability, accelerate recovery, and protect poor people. But to enable countries to accept financial assistance, international financial institutions may have to relax some adjustment targets during crises. In Zambia in 1992–93 the tight public spending policy being implemented as part of adjustment restricted the government's ability to raise external financing because of the lack of counterpart resources in the local currency. As a result, international funds for drought relief were not fully used.⁶²

The reconstruction period provides an opportunity to reduce vulnerability to natural events (see box 9.6). Targeted assistance locally for the most affected populations (with the poor the top priority) and consultation with affected communities and households should be a key strategy. Including local people in reconstruction activities can foster leadership and promote solidarity, helping reduce the psychological trauma caused by natural disasters (box 9.9).⁶³

Countries that have social or rural infrastructure investment funds can use them to channel resources efficiently.⁶⁴ Given their experience in building infrastructure and providing social services to communities, these funds can quickly identify local spending priorities and help minimize corruption. The Honduras Social Investment Fund performed this role in the aftermath of Hurricane Mitch. It financed the opening of several important secondary roads, began the rehabilitation of some water systems in secondary towns, and undertook cleanup activities. The fund rapidly put in place a decentralized operating structure and responded to the pressing needs of local municipalities and communities. Procedures established by the fund immediately after the disaster simplified project preparation and authorization and expedited contracting and disbursement of funds. Close monitoring by local residents of private contractor equipment and employment of local residents in cleanup activities helped ensure that funds were well accounted for.⁶⁵

The experience produced valuable lessons on how to improve the capacity of such funds to cope with disaster: providing adequate financial resources to meet post-disaster needs, ensuring that investment projects go beyond rehabilitation and cleanup to include expansion of existing facilities and new construction, and expanding the fund's mandate to allow direct social assistance to vulnerable people.⁶⁶

Box 9.9**Involving communities in postdisaster reconstruction: lessons from the Maharashtra Emergency Earthquake Rehabilitation Program**

On 30 September 1993 an earthquake struck the Indian state of Maharashtra, killing some 8,000 people and damaging 230,000 houses in Latur, Osmanabad, and 11 other districts. With the help of the World Bank, the government of Maharashtra created the Maharashtra Emergency Earthquake Rehabilitation Program. The program institutionalized community participation and formal consultation with beneficiaries at all stages.

The program divided communities into two categories: those that needed to be relocated—the 52 villages that sustained the worst damage—and those that needed to be reconstructed, repaired, or strengthened. The Tata Institute of Social Sciences worked in the 52 relocation villages, which had some 28,000 families. The Society for Promotion of Area Resource Centers organized community participation in the 1,500 villages—with some 190,000 families—in which rebuilding or repair was to take place.

Over time the program became a people's project. As results materialized, community participation received greater acceptance. Initially skeptical, officials in the project management unit later came to acknowledge community participation as an

effective tool for dealing with problems that arise during implementation.

Participation also had a positive psychological effect on communities. Involving local people in the reconstruction helped them overcome the trauma caused by the earthquake. Recognizing this, the government began reconstruction in small villages even before the rehabilitation program began, appealing to donors, corporations, NGOs, and religious organizations to "adopt" villages for reconstruction. Some organizations also worked on social issues, such as schooling for children.

Information on the program, its processes, and the mechanisms for redress was accessible—and awareness was high. The participatory process opened many informal channels of communication between the people and the government, helping to narrow the gap between them. Beneficiaries learned of their entitlements and worked hard to secure them. People who felt that their grievances were not addressed appropriately in the village or *taluka* (an administrative unit that includes several villages) could take them to the district authorities and the government in Mumbai.

Source: Vatsa 1999.

Workfare programs can usefully be introduced or expanded in disaster areas in conjunction with reconstruction operations, providing a livelihood to people who can no longer support themselves (chapter 8). They can also help people affected by the less visible impacts of a disaster, such as the poor fishers in Ecuador and Peru who fell deeper into poverty as fish fled the waters warmed by El Niño. In Northeast Brazil the program Frente de Trabalho (Work Front) provided similar employment opportunities in periods of drought. During the 1979–84 drought it employed up to 3 million workers in construction and drought-related jobs.⁶⁷ Public work programs that build social or community infrastructure or help in cleanup and reconstruction can also be a good option.

• • •

Large adverse shocks—economic crises and natural disasters—cause poor people to suffer not only in the short run. They undercut the ability of the poor to move out of poverty in the long run as well, by depleting their human and physical assets. Particularly harmful are the effects on poor children, who may suffer irreversible damage if a crisis or natural disaster increases malnutrition or forces them to drop out of school. Integral to any poverty reduction strategy should thus be measures to prevent and manage economic crises and natural disasters—and to establish safety nets, with ensured financing, to help poor people cope when these adverse shocks do occur.