

Chapter 6 Managing Economic Crises and Natural Disasters

6.1 Economic crises and natural disasters are among the most important causes of sharp increases in the incidence of poverty. These phenomena have occurred throughout history and are likely to continue to occur unless decisive efforts are made to prevent them.

Economic crises

6.2 Macroeconomic crises cause large increases in income (or consumption) poverty. These crises affect not only the current living standards of the poor but their ability to grow out of poverty. During crises poor children face malnutrition and frequently drop out of school. Poor households are often forced to sell their meager assets at depressed prices. Both responses help perpetuate chronic poverty and reduce overall economic growth. An anti-poverty strategy should thus include crisis prevention and a pro-poor response to crises as top priorities.¹

6.3 Economywide crises were a recurrent phenomenon in the 1990s. Crises in Mexico in 1995, East Asia in 1997, and Brazil and the Russian Federation in 1998 received wide media coverage, but they were not the only episodes of economic duress. Some crises were brought on by internal mismanagement; others were triggered by terms of trade shocks, volatility in capital flows, and contagion.

6.4 Economic crises hurt both the poor and the nonpoor, but declines in income are far more devastating for the poor. The poor are not likely to accumulate sufficient savings or self-insurance coverage to see them through in bad times. Poor people have limited or no access to social or market-based insurance schemes. They have little access to social insurance schemes because they are self-employed or work for employers who often fail to make required contributions. Their access to private market insurance or credit mechanisms is limited because these markets are underdeveloped or transaction costs are high.

6.5 An economic crisis affects the poor through various channels. Real wages fall and unemployment tends to rise, driving down labor earnings. Nonlabor incomes fall as well because of declines in economic activity and the changes in the relative prices of the goods and services produced by the poor. Removal of food subsidies and the increase in rates and sometimes coverage of indirect taxes on food and other products whose weight is relatively high in the consumption basket of the poor exacerbate the decline in real incomes. Private transfers, particularly from family members, are likely to fall as the standard of living falls across the nation. Net government transfers may also decline, as governments cut back on social assistance as part of a fiscal austerity program. Fiscal austerity measures may also reduce the quantity and quality of public services used by the poor (and plans for their expansion) and the budget for pro-poor programs in general. Crises also affect the meager assets of the poor, which can be wiped out by inflation or a collapse in land prices. Macroeconomic crises also reduce the accumulation of human,

¹ Lustig 1999.

financial, and physical capital, which can weaken the ability of the poor to grow out of poverty.

Social impact of crises

6.6 Lustig (1999) shows that there is a strong link between macroeconomic downturns and rising poverty. It has been estimated that for every one percent decline in growth, poverty rises approximately 2 percent.² Because crises often tend to be accompanied by increases in inequality, economic contractions reverse previous gains in poverty reduction proportionally more. In Latin America and the Caribbean, each one percent decline in per capita income during the 1980s reversed the reduction in poverty that had been achieved by an increase of 3.7 percent in income per head for urban areas and 2 percent for rural areas during the 1970s.³ Crises can ratchet up inequality, so that when growth is resumed it often fails to reverse the increase in poverty that takes place during a severe downturn.

6.7 Poverty (as measured by the headcount ratio) tends to increase during periods of crises (table 6.1). In every crisis in Latin America and the Caribbean, the incidence of poverty increased at the onset of the crisis and remained higher than before the crisis several years later. In East Asia poverty in most countries rose as a result of the crisis of the late 1990s, with urban poverty doubling in the Republic of Korea and rising almost 50 percent in Indonesia. In Russia poverty rose from 21.9 percent to 32.7 percent between 1996 and 1998.⁴

6.8 Inequality (as measured by the Gini coefficient) rose at the onset of the crisis in 5 out of 10 episodes for which data were available; in 16 out of 21 episodes for which pre- and postcrisis data were available, the Gini coefficient was higher after the crisis than before (table 6.2).⁵ However, the poorest quintile of the population is not always hurt disproportionately. In Latin America, for example, the share of the middle ranges which often fell the most during the 1980s debt crisis. However, the rich were protected from the brunt of the crisis: the income share of people in the top decile rose, sometimes substantially, in most countries.⁶

6.9 Most social indicators either deteriorate or improve at a slower pace during a macroeconomic crisis (table 6.3). Social indicators such as infant mortality rates continued to improve in Latin America during the 1980s, although they did so at a slower pace than during the previous decade. Health indicators that are more sensitive to consumption or income downturns, however, worsened. In Chile the incidence 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,

² Ravallion and Chen 1997 and Fields 1991. A similar result has been found by Morley 1994.

³ De Janvry and Sadoulet 1999.

⁴ Interestingly, although per capita output in Thailand fell 1.8 percent in 1997 and 10 percent in 1998, the increase in poverty was very small. Growth figures from Bank of Thailand website.

⁵ However, some of the Gini's refer to urban areas only.

⁶ See Lustig 1995, Introduction, pp. 4-5. Income inequality has not risen after every crisis. Following the Mexican peso crisis in 1995, inequality actually fell. In East Asia income inequality was largely unaffected by the crisis.

reversing the trend of the previous decade. In Argentina daily per capita intake of protein declined by 3.8 percent in 1995, when GDP fell 4.1 percent; in Venezuela it fell 2.9 percent in 1994, when GDP fell 4.6 percent. The fraction of adult women whose body mass index is below the level at which mortality and morbidity risks increase rose 25 percent in Indonesia, and the weight of children under 3 declined during 1998.

Table 6.1 Poverty and crisis (poverty headcount ratio)

Country	Year of crisis	Poverty headcount ratio					Change in GDP per capita	
		Before crisis (year)	Year of crisis	After crisis (year)		Relative to year of crisis	Relative to year before crisis	
Argentina ^a (Greater Buenos Aires)	1985	10.1 (1980)	20.6	+	25.2 (1987)	+	+	-
Argentina ^a (Greater Buenos Aires)	1989	25.2 (1987)	47.3	+	33.7 (1990)	+	+	-
Argentina ^a (Greater Buenos Aires)	1995	16.8 (1993)	24.8	+	26.0 (1997)	+	+	+
Brazil ^b (All metropolitan areas)	1990	27.9 (1989)	28.9	+	— —			
Chile ^c (Metropolitan areas) §/	1982	40.3 (1980)	—		48.60 (1987)	+	+	-
Costa Rica ^d */	1982	29.6 (1981)	32.3	+	29.7 (1983)	+	+	-
Dominican Republic ^d */	1985	37.3 (1984)	—	—	38.2 (1986)	+	+	+
Dominican Republic ^d */	1990	35.7 (1989)	—	—	39.5 (1992)	+	+	-
Guatemala ^c §/	1982	65.0 (1980)	—	—	68.0 (1986)	+	-	-
Indonesia ^f */	1998	11.3 (1996)	16.7	+	— —			
Jordan ^g */	1989	3.0 (1987)	—	—	14.9 (1993)	+	+	+
Korea (Urban) ^f */	1998	8.6 (1997)	19.2	+	— —			
Mexico ^h	1986	28.5 (1984)	—	—	32.6 (1989)	+	+	+
Mexico ⁱ §/	1995	36.0 (1994)	—	—	43.0 (1996)	+	+	-
Panama ^d */	1983	40.6 (1980)	—	—	44.0 (1986)	+	-	-
Panama ^d */	1988	44.0 (1986)	—	—	50.0 (1989)	+	-	-
Peru ^c §/	1983	46.0 (1979)	—	—	52.0 (1986)	+	+	-
Peru ^j (Urban) */	1988	32.2 (1985)	—	—	50.0 (1991)	+	-	-
Russia ^k **/	1998	21.9 (1996)	32.7	+	— —			
Thailand ^f	1997	11.4 (1996)	—	—	12.9 (1998)	+	—	—
Uruguay ^c §/	1982	11.0 (1981)	—	—	15.0 (1986)	+	-	-
Venezuela ^l §/	1983	25.7 (1982)	32.7	+	34.8 (1985)	+	-	-
Venezuela ^l §/	1989	40.0 (1988)	44.4	+	41.5 (1990)	+	+	-
Venezuela ^l §/	1994	41.4 (1993)	53.6	+	48.2 (1996)	+	-	-

Note: — Not available. + represents increase, - represents decrease, = represents no change.

Headcount based on individual per capita household income and national poverty lines unless otherwise noted. For Argentina, Brazil, Chile, Korea and Peru there was no information at the national level.

§/ Based on household income, */ based on per capita expenditure **/ based on household expenditure

Source: Real GDP per capita data from WDI, World Bank

- a. Ministerio de Economía de Argentina “Informe Económico N°28” and Morley and Alvarez 1992 “Recession and the growth of poverty in Argentina” based in Instituto Nacional de Estadística y Censos.
- b. Barros, Mendoca, and Rocha 1995, "Brazil: Welfare, Inequality, Poverty, Social Indicators, and Social Programs in the 1980s" in Lustig ed 1995, Coping With Austerity, The Brookings Institution.
- c. Lustig, Nora 1995. op cit. table 1.1
- d. Londoño and Székely 1997. “Persistent Poverty and excess inequality: Latin America, 1970-1995”, Inter-American Development Bank.
- e. ECLAC 1996. Social Panorama of Latin America 1996, Santiago de Chile.
- f. World Bank 1999a. Global Economic Prospects and the Developing Countries 2000. Washington, D.C.
- g. World Bank 1994b. Hashemite Kingdom of Jordan Poverty Assessment. Report No. 12675-JO.
- h. Lustig and Székely 1998. "Economic Trends, Poverty and Inequality in Mexico". IADB-SDS POV, Washington, D.C.
- i. ECLAC 1999. Social Panorama of Latin America, 1998.
- j. Escobal, Javier, Jaime Saavedra and Máximo Torero 1998. “Los Activos de los Pobres en el Perú”. Documento de Trabajo N°26. Grupo de Análisis para el Desarrollo, Lima.
- k. Lokshin and Ravallion 2000. “Welfare Impact of Russia’s 1998 Financial Crisis and the Response of the Public Safety Net”. Mimeo. Washington, D.C.
- l. Ruprah and Marcano 1998. Mimeo, work in progress. Washington, D.C.

Table 6.2 Inequality and crisis

Country	Year of crisis	Gini coefficient				After Crisis GDP per Capita	
		Before crisis	Year of crisis	After crisis	vs. yr. of the Crisis	vs. yr. Before Crisis	
Argentina ^a (Greater Buenos Aires)	1985	.40 (1983)	.40 =	.45 (1988)	+	+	-
Argentina ^b (Greater Buenos Aires)	1989	.44 (1986)	.53 +	.45 (1992)	+	+	+
Argentina ^c (Greater Buenos Aires) §/	1995	.36 (1994)	— —	.38 (1996)	+	+	-
Brazil ^d	1990	.61 (1989)	.61 =	.59 (1992)	-	+	-
Chile ^e (Santiago)	1982	.53 (1980)	.54 +	.55 (1984)	+	-	-
Costa Rica ^c	1982	.40 (1980)	.42 +	.38 (1984)	-	+	-
Dominican Republic ^f §/	1985	.42 (1984)	— —	.51 (1986)	+	+	+
Dominican Republic ^d	1990	.51 (1989)	— —	.52 (1992)	+	+	-
Guatemala ^c §/	1982	.48 (1981)	— —	.53 (1986)	+	-	-
Korea ^g	1998	.290 (1997)	.294 =	— —			
Jordan ^h */	1989	.36 (1987)	— —	.43 (1992)	+	+	+
Indonesia ^g */	1998	.38 (1996)	.37 -	— —			
Mexico ⁱ	1982	.50 (1977) §/	— —	.51 (1984)	+	-	-
Mexico ^j	1986	.47 (1984)	— —	.53 (1989)	+	+	+
Mexico ^k	1995	.48 (1994)	— —	.46 (1996)	-	+	-
Panama ^{d*}	1983	.48 (1980)	— —	.52 (1986)	+	-	-
Panama ^{d*}	1988	.52 (1986)	— —	.57 (1989)	+	-	-
Peru ^c (Lima)	1983	.34 (1981)	— —	.39 (1984)	+	+	-
Peru ^c (Lima)	1988	.39 (1987)	— —	.41 (1989)	+	-	-
Thailand ^g **/	1997	.477 (1996)	— —	.481 (1998)	=	-	-
Uruguay ⁱ (urban)	1982	.43 (1981)	— —	.40 (1983)	-	-	-
Venezuela ^d	1983	.44 (1981)	.45 +	.48 (1985)	+	-	-
Venezuela ^d	1989	.47 (1987)	.46 -	.46 (1991)	-	+	+
Venezuela ^d	1994	.45 (1992)	.50 +	.47 (1995)	+	+	-

Note: Based on individual per capita household income unless otherwise noted.

§/ Based on households. */ Based on per capita expenditure. **/ Based on welfare defined as income per capita adjusted by age and sex structures of the household

Source: Real GDP per capita data from WDI, World Bank.

- a. Fiszbein et al 1993. "La Pobreza y la Distribucion de los Ingresos en America Latina: Historia del Decenio de 1980" LAC Technical Dept. Report No. 27, The World Bank, Washington, D.C.
- b. World Bank 1995. "Argentina: Argentina's Poor: A Profile". Washington D.C.
- c. Altimir and Becaria. 1997. "Efectos de los cambios macroeconomicos y de las reformas sobre la pobreza urbana en la Argentina". Paper prepared for the project "Politicos Macroeconomicos y Pobreza en America Latina y el Caribe. UNDP, IDB, ECLAC. October.
- d. Londoño and Székely 1997. "Persistent Poverty and excess inequality: Latin America, 1970-1995", Inter-American Development Bank
- e. Morley 1994. "Poverty and Inequality in Latin America, Past Evidence and Future Prospects." Policy Essay No. 13 ODC, Washington, D.C.
- f. Aristy and Dauhajre 1998. "Efectos de las Politicas Macroeconomicas y Sociales Sobre la Pobreza en la República Dominicana" IADB-SDS POV, Washington, D.C.
- g. World Bank 1999a. Global Economic Prospects and the Developing Countries 2000.
- h. World Bank 1994b. Hashemite Kingdom of Jordan Poverty Assessment (1994). Report No 12675-JO
- i. Deininger and Squire 1996. "Measuring Income Inequality: a new database". WP, Worldbank, 1996
- j. Lustig and Székely 1998., "Economic Trends, Poverty and Inequality in Mexico." IADB-SDS POV, Washington, D.C.
- k. INEGI (Mexico). CD-ROM. Encuesta Nacional de Ingresos y Gastos de los Hogares, 1992, 1994 y 1996.

"+" , means an increase, "-" , means a decline , "=" , means no change, Blanks mean "not available"

6.10 School attendance and literacy also took a hit during episodes of crises. In Indonesia the dropout rate for all children 7–12 increased from about 1 percent in 1997 to 3.5 percent in 1998 revealing that the hardest hit were poor children (table 6.3). In the Philippines school enrollment 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 during the previous five years. In Mexico the proportion of each graduating class that enrolled in the next educational level declined after 1982, 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 Venezuela the literacy rate for 15- to 19-year-olds fell in the 1980s. Gross primary enrollment slowed in Argentina and Mexico in 1995 (table 6.3).

6.11 In Thailand the situation was different. Thailand's GDP fell by about 12 percent between 1996 and 1998, a larger decline than in the most recent crises in Argentina, the Republic of Korea, Malaysia, and Mexico. Despite the decline, education and health indicators did not suffer much (box 6.1).⁷

Box 6.1 Mitigating the effects of macroeconomic crisis on health and education: The Thai experience

Many people feared that the economic and financial reversals caused by the 1997 crisis would impose severe hardship on Thai families. In addition to the employment and wages impacts, it was expected that government social programs would be cut back; prices of key social commodities, such as imported medicines, would rise; families would drastically reduce their spending on health and education; and education and health services would become too expensive for a growing number of impoverished families. These expectations may have been reasonable given the chaos in Asia's markets in 1997. But preliminary evidence for Thailand appears to indicate that families and government programs cushioned the effects of crisis on health and education.

The fact that health and education indicators did not worsen significantly may have been the result of the following factors:

- Families adjusted their spending strategies to keep their children in school largely sacrificing spending on nonessential consumables.
- The Ministries of Education and Health adjusted spending priorities and supplemented sensitive programs to sustain service availability at or above precrisis levels and contain out-of-pocket costs. The Ministry of Education allowed parents to pay tuition fees in installments; let schools waive tuition fees on a case-by-case basis; introduced scholarships; expanded the education loan program, with special emphasis on the needs of unemployed parents; encouraged private schools to extend payment deadlines and prohibited them from increasing tuition; provided vouchers to private school children in metropolitan Bangkok; and encouraged local international schools to accommodate students returning from overseas. The government strengthened its health safety net by increasing public health insurance coverage and maintaining or increasing subsidies to schemes aimed at protecting the vulnerable and the near-poor.
- Based on small-scale surveys by UNICEF and the Asian Development Bank it was found that school administrators used innovative coping mechanisms to help prevent adverse impacts on education. Principals successfully elicited in-kind and cash contributions from parents and community members, administrators and teachers provided food, students receiving free milk and lunches were rotated, and materials were reused. School principals expressed confidence in managing reduced budgets, even if cuts were to continue.

These encouraging responses should not lead to complacency. The crisis in Thailand is taking its toll, albeit less severely than elsewhere. A source of concern, for example, is the increase in the number of children leaving school at the crucial transition points to lower and upper secondary school. Between 1997-98 and 1998-99 students completing primary school but not going on to lower secondary school

⁷ World Bank 1999b.

accounted for 21 percent of the total increase in drop-outs. The number of students not moving on to upper secondary (general and vocational) accounted for 25 percent of all drop-outs.

Source: World Bank 1999b.

Table 6.3 Social impact of economic crisis

	Jordan 1989	Argentina 1995	Mexico 1995	Thailand 1997	Indonesia 1998	Philippines 1998
Main crisis indicators:	Real GDP fell 13.5%. ^a Private per capita consumption fell 16.8%. ^a	Per capita GDP fell 4.2%. ^b Private per capita consumption fell 6.4%. ^c	Per capita GDP fell 8.1%. ^b Private per capita consumption fell 11.5%. ^c	Average real GDP fell 1.8% in 1997 and 10% in 1998. ^d	GDP growth rate fell from 4.9% in 1997 to -14.3% in 1998. ^a No growth projected in 1999 ^e Private consumption, which rose 5.9% in 1997, fell 7.6%. ^a	Real GDP, which rose 5.2% in 1997, fell by 0.5%. ^a
Poverty and Inequality:	Poverty rate increased from 3% in 1986-87 to 14.9% in 1993. ^f Gini coefficient rose from 0.36 in 1986-87 to 0.43 in 1992, with most of the increase driven by rising inequality in urban areas (where the Gini rose from 0.36 to 0.44). ^g	Urban income-based Gini coefficient rose from 0.36 in 1994 to 0.38 in 1996. ^h Moderate poverty headcount rose from 16.9% in 1993 to 24.8% in 1995. ^h	Moderate poverty headcount rose from 36% in 1994 to 43% in 1996. ⁱ	Headcount ratio increased from 11.4% in 1996 to 12.9% in 1998, pushing more than 1 million people into poverty. ^j Number of poor whose income was less than 80% of the official poverty line rose 16.6% between 1996 and 1998. ^k Gini coefficient rose from 47.7 in 1996 to 48.1 in 1998. ^l Percentage of poor in villages rose 15.3% between 1996 and 1998. Percentage of poor rose 24.4% in sanitary districts and declined 6.6% in municipal districts. ^m	Overall poverty rate increased from 11% in 1997 to 19.9% in 1998. Poverty in urban areas increased from 9.2% to 15.8% Poverty in rural areas increased from 12.4% to 23%. ⁿ	Simulation results for 1998 show that incomes of the poorest income decile fell 4.6% and richest decile's fell 3.1%. ^o Gini coefficient rose from 0.496 in 1997 to 0.5 in 1998. ^p Incidence of self-reported poverty rose from 40% in 1998 to 43% in 1999. ^q Ratio of share of total income of the richest quintile to poorest quintile increased from 12.7% in 1997 to 16.4% in 1998. ^r

^a WorldBank. World Development Indicators.

^b IDB Statistical and Social Database

^c ECLAC. Statistical Yearbook for Latin America and the Caribbean

^d Bank of Thailand.

^e Table 1 in Kato, Toshiyasu. *The Asian Financial Crisis and Southeast Asian Transitional Economies: Impacts, Policy Responses, and Lessons*. ADB 1999 p.11.

^f World Bank 1994b. Hashemite Kingdom of Jordan Poverty Assessment. Report No 12675-JO. October 28, Table 2.1, p.11.

^g World Bank 1994b. Hashemite Kingdom of Jordan Poverty Assessment. Report No 12675-JO. October 28, Table 3.8, p.32.

^h Altimir and Becaria 1998. "Efectos de los Cambios Macroeconomicos y de las Reformas sobre la Pobreza Urbana en la Argentina" in Ganuza, Taylor and Morley. *Politica Macroeconomica y Pobreza en America Latina y el Caribe* (PNUB/CEPAL/BID).

ⁱ CEPAL. *Panorama Social*, 1998.

^j Kakwani, N. *Poverty and Inequality during the Economic Crisis in Thailand*. Indicators of Well-being and Policy Analysis. NESDB/ADB. Vol 3, No.1 Jan. 1999, p. 4.

^k Kakwani, N. *Poverty and Inequality during the Economic Crisis in Thailand*. Indicators of Well-being and Policy Analysis. NESDB/ADB. Vol 3, No.1 Jan. 1999, p. 4-5.

^l Table 6 in Kakwani, N. *Poverty and Inequality during the Economic Crisis in Thailand*. Indicators of Well-being and Policy Analysis. NESDB/ADB. Vol 3, No.1 Jan. 1999, p. 5.

^m Note: Sanitary Districts are areas between rural and urban zones. Table 8 in Kakwani, N. *Poverty and Inequality during the Economic Crisis in Thailand*. Indicators of Well-being and Policy Analysis. NESDB/ADB. Vol 3, No.1 Jan. 1999, p. 7.

ⁿ Note: the poverty rate is calculated using Government inflation rates adjusted for price levels estimated through the Indonesian Family Life Surveys. When no adjustment is made for IFLS prices, poverty rate estimates for 1998 are lower. See Table 2.2 in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*. March 1999.

^o Table 9 in Reyes, Cecilia and Anne Bernadette E. Mandap *The Social Impact of the Regional Financial Crisis in the Philippines*, MIMAP Research Paper Series No., 41, February 1999.

	Jordan 1989	Argentina 1995	Mexico 1995	Thailand 1997	Indonesia 1998	Philippines 1998
Labor markets	Unemployment rate increased from 8.8% in 1988 to 10.3% in 1989 to 16.8% in 1990. ^s	Average real wages fell 1.1%. ^c Urban unemployment rate rose from 11.5% in 1994 to 17.5% in 1995. ^b	Average real remuneration for urban workers which rose 3.7% in 1994 fell 13.5% in 1995. ^t Urban open unemployment rate rose from 3.7% in 1994 to 6.3% in 1995, falling to 3.8% in 1997. ^t	Declared unemployment rate rose from 2.2% in February 1997 to 4.6% in February 1998. Total unemployment rose from 5.4% to 8.5%. ^u Workers' income fell by 18.5% as a result to the crisis (no years specified). ^v	Unemployment rate rose from 5.1% in February 1997 to 6.4% in February 1998. ^w Number of working women (paid and unpaid) increased 20.7% in rural areas and 17.0% in urban areas in 1998. ^x Almost 15% of males working in 1997 had lost their jobs by August 1980. ^y Median daily real wages for men fell 28.5% in rural areas and 39.2% in urban areas. Median daily real wages for women fell 30.0% in rural areas and 44.5% in urban areas. ^z	Unemployment rose 2.9 percentage points to 13.3% between second quarter of 1997 and second quarter of 1998. ^{aa} Number of permanent layoffs more than doubled between 1997 and 1998. ^{bb} Between July 1997 and September 1998, a number of regular female workers fell 21.6% and number of regular male workers fell 8.3%. Number of employed, nonwage female workers increased 14.5% between January and September 1998. Increase for men was 6.9%, suggesting that structural adjustment has disproportionately pushed women into irregular work or self-employment. ^{cc}
Social spending:	Public health expenditure rose	Social spending as a share of total expenditure	Social expenditure as percentage of GDP fell	In 1999 budgetary allocations included 11.0% cut by Ministry	Real 1998/1999 budgetary allocations for education were	Spending on social welfare services fell to 3.0% of total

^p Reyes, Cecilia and Anne Bernadette E. Mandap *The Social Impact of the Regional Financial Crisis in the Philippines*, MIMAP Research Paper Series No., 41, February 1999, p. 13.

^q Rapporteurs' Report, *Openness Macroeconomics Crisis and Poverty: A Dialogue and Consultation on World Development Report 2000-01*, May 10-12 1999, Kuala Lumpur, Malaysia.

^r Rapporteurs' Report, *Openness Macroeconomics Crisis and Poverty: A Dialogue and Consultation on World Development Report 2000-01*, May 10-12 1999, Kuala Lumpur, Malaysia.

^s World Bank 1994b. Hashemite Kingdom of Jordan Poverty Assessment. Report No 12675-JO. October 28, Table 1, p.1, Table 8, p 21.

^t Lustig, Nora 1998.

^u National Statistical Office in Budget of Ministry of Education and Interior (1998), compiled by Focus on the Global South

^v Kakwani 1998 in Paitoonpongk Srawooth and Cheerapun Gullaprawit. *An Inventory of Research, Monitoring and Government Safety News with Reference to the Social Impacts of the Economic Crisis: Thailand*. May 1999.

^w Poppele, Jessie, Sudarno Sumarto and Lant Pritchett 1999. *Social Impacts of the Indonesian Crisis: New Data and Policy Implications*. SMERU report, p. 14.

^x Table 3.1 in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle 1999. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*.

^y Table 3.1 in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle 1999. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*.

^z Note: If Government prices rather than IFLS prices are used to calculate median daily real wage, the drop in real wages between 1997 and 1998 is lower. See Table 3.1 in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle 1999. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*. March.

^{aa} National Statistics Office; www.pdf.org.ph/mimap/eindune.htm

^{bb} Bureau of Labour and Employment statistics in www.pdf.org.ph/mimap/v610399a.htm

^{cc} Pilwha, Chang 1999. *Impact of Economic and Financial Crisis on Women in South Korea*. May, p. 11.

	Jordan 1989	Argentina 1995	Mexico 1995	Thailand 1997	Indonesia 1998	Philippines 1998
	<p>from about 2.5% of GDP in 1989^{dd} to 3.6% in 1990.^a</p> <p>Public spending on education as a share of GDP fell from 5.5% to 3.8% between 1985 and 1990.^{ee}</p>	<p>rose from 65.2% in 1994 to 66.8% in 1995; as percentage of GDP it increased from 18.1% to 18.6%.^t</p> <p>Education spending as percentage of GDP rose from 3.7% in 1994 to 4.0% in 1995. Health spending as percentage of GDP rose from 1.9% to 2.0%.^t</p>	<p>from 9.0% in 1994 to 6.8% in 1995. Education spending as percentage of GDP fell from 3.9% in 1994 to 3.6% in 1996.^t</p>	<p>of Education, 14.6% cut by the Ministry of Public Health, 15.4% cut by Ministry of Labor and Social Welfare.^{ff}</p> <p>Although FY 1998 budget was cut 15%, share of total budget allocated to education rose from 21.9% in 1997 to 24.9% in 1998, leaving real expenditures on education constant between FY 1997 and FY 1998.^{gg}</p> <p>Real government health expenditures increased by 11% between 1996 and 1998.^{hh}</p> <p>Budget for HIV/AIDS control program fell by 23.0% and actual expenditures fell 29.0% between 1996 and 1998.ⁱⁱ</p>	<p>the same as 1996-1997, although share of education expenditures in total development budget fell from 10.0% to 8.0%.^{jj}</p> <p>Real basic education budget increased by 55% between 1996-1997 and 1998-99 (mainly for “Stay in School” scholarships and school block grants). Real allocations to secondary education fell 42% and real allocations to higher education fell 26%.^{kk}</p>	<p>government sectoral spending in 1998, down from 4.1% in 1997. Proposed 1999 expenditures would return social welfare spending to 1997 levels. Spending on health services as a percentage of government sectoral spending fell from 2.9% (actual) in 1997 to 2.6% (planned) in 1998 and 2.4% (proposed) in 1999.^{ll}</p> <p>Budgetary allocations to primary level schooling stagnated at 58.9% of the total education budget in 1998, secondary schooling allocations increased from 17.9% in 1997 to 19.8% in 1998. Tertiary allocations rose from 18.6% to 18.8%.^{mmm}</p>
Health:	<p>Malnutrition among children under 5 rose from about 6.4% in 1990 to 9.7% in 1991.^a</p> <p>Infant mortality rate</p>	<p>Per capita daily protein intake fell 3.8% in 1995, increased 1.9% in 1996.^b</p> <p>Deaths from pneumonia and influenza rose nearly 6% in 1995.ⁿⁿ</p>	<p>Among children under 1, mortality from anemia increased from 6.3 deaths per 100,000 live births in 1993 to 7.9 in 1995. Among children 1-4 rate rose</p>	<p>No increase in number of cases of malnutrition reported. No indication of decrease in essential services outputs in district hospitals.^{oo}</p> <p>Ministries of Education and Health adjusted expenditure</p>	<p>Drug prices rose between 200% and 300% between November 1997 and March 1998.^{pp}</p> <p>Use of health services, mainly preventive services, by children declined 38% in 1998.^{qq}</p> <p>Percentage of adult women</p>	<p>MIMAP nutrition model forecasts increase in prevalence of malnutrition and increase in demand for public health care facilities.^{uu}</p>

^{dd} World Bank 1991. *Jordan: Public Expenditure Review*, Feb. 1991, p. 47.

^{ee} Human Development Indicators: Country at a Glance, MNA Live Database.

^{ff} The Bureau of the Budget in Budget of Ministry of Education and Interior; compiled by Focus on the Global South.

^{gg} World Bank 1999b. *Thailand Social Monitor*, Second Issue, p. 5.

^{hh} World Bank 1999b. *Thailand Social Monitor*, Second Issue, p. 16.

ⁱⁱ World Bank 1999b. *Thailand Social Monitor*, Second Issue, p. 18.

^{jj} Table 7.4, World Bank 1999c. BAPPENAS in Indonesia: Education in Indonesia, from Crisis to Recovery. PREM. East Asia Region. World Bank document, June 1999.

^{kk} Table 7.4, World Bank 1999c. BAPPENAS in Indonesia: Education in Indonesia, from Crisis to Recovery. PREM. East Asia Region. World Bank document, June 1999.

^{ll} Table 1.11 in World Bank 1998f. *Philippines Social Expenditure Priorities*. World Bank Document. November.

^{mmm} Table 2.3 in World Bank 1998f. *Philippines Social Expenditure Priorities*. World Bank Document. November.

ⁿⁿ PAHO. Health in the Americas.

	Jordan 1989	Argentina 1995	Mexico 1995	Thailand 1997	Indonesia 1998	Philippines 1998
	remained roughly constant between 1987 and 1992 at 34 per 1,000 live births. ^a		from 1.7 to 2.2 deaths per 100,000. ⁿⁿ	priorities to maintain service availability. Public health and education services expanded during crisis although aggregate results may have masked severity of impacts on some segments of population. ^{oo}	whose body mass index is below levels at which morbidity and mortality risks increase rose 25%. ^{pp} Most indicators of child nutritional status remained constant. Exception maybe weight (conditional on height) of children under 3, suggesting that families may be investing in some members at the expense of others. ^{ss} Declines in visits to the community health post by children under 3 receiving Vitamin A. ^{tt}	
Education:	Adult illiteracy rates decreased from 25% in 1985 to 12.8% in 1997. ¹ Primary school enrollment, which rose more than 50% in 1989, increased by just 5.4% in 1990. ^{vv}	Growth in total primary enrollment declined from 2.2% in 1993 to 0.62% in 1996. ^b	Growth in total primary enrollment fell from 0.44% in 1994 to 0.35% in 1995. ^t	Total enrollment ratio rose from 74.8% in 1997-98 to 75.5% in 1998-99. ^{aaa} Dropouts as a percentage of school-age population rose from 5.5% in 1997-98 to 6.7% in 1998-99. ^{bbb} Dropout rate in rural areas significantly higher than in urban areas, with largest discrepancies at pre-school and higher education levels. ^{ccc}	Dropout rates for urban children 7-12 rose from 0.9% in 1997 to 1.3% in 1998; in rural areas rates rose from 1.3% to 5.4%. For children 13-19, drop-out rates rose in urban areas rose from 11.1% to 17.5%; in rural areas rates from 13.5% to 16.8%. ^{ddd} Dropout rates for children 7-12 in poorest quartile rose from 1.3% in 1997 to 7.5% in 1998. For children 13-19 rates rose	Secondary school enrollment, which rose at an average rate of 2.6 percent a year between 1993-94 and 1997-98, rose only 0.9 percent in 1998-99. ^{hhh}

^{oo} World Bank 1999b. *Thailand Social Monitor*, Second Issue, p.15.

^{pp} www.worldbank.org/poverty/eacrisis/countries/indon/health1.htm

^{qq} Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*, p. 66.

^{rr} Thomas, Duncan. *Economic Crisis and Poverty: Evidence from Indonesia*. July 1999.

^{ss} Thomas, Duncan. *Economic Crisis and Poverty: Evidence from Indonesia*. July 1999.

^{tt} Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*, p. 59.

^{uu} Reyes, Cecilia and Anne Bernadette E. Mandap. *The Social Impact of the Regional Financial Crisis in the Philippines*, MIMAP Research Paper Series No. 41, February 1999, p. 14.

^{vv} SIMA. UNESCO Database.

^{aaa} World Bank 1999b. *Thailand Social Monitor*, Second Issue, p. 9.

^{bbb} World Bank 1999b. *Thailand Social Monitor*, Second Issue, p. 12.

^{ccc} World Bank 1999b. *Thailand Social Monitor*, Second Issue, p. 11.

^{ddd} Table 4.1 and 4.2. in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*. March 1999.

	Jordan 1989	Argentina 1995	Mexico 1995	Thailand 1997	Indonesia 1998	Philippines 1998
					<p>from 14.2% to 25.5%. In both cohorts, poorest quartile experienced largest increase in dropout rates.^{ccc}</p> <p>Percentage of children 7–12 from lowest quartile not enrolled in school rose from 4.9% in 1997 to 10.7% in 1998. For children 13–19, rates rose from 40.7% to 57.1%. In both cohorts, the poorest quartile experienced the largest increase.^{fff}</p> <p>Percentage of children 7–12 not enrolled in school rose from 3.8% in 1997 to 8.2% in 1998 in rural areas; in urban areas rates rose from 1.9% to 2.2%. Percentage of children 13–19 not enrolled in school in rural areas rose from 39.1% to 48.5%; in urban areas rates rose from 25.0% to 38.1%.^{ggg}</p>	
Other indicators				<p>NGOs report increase in child labor, child prostitution, and child beggars.ⁱⁱⁱ</p>	<p>Teachers report children eating less before coming to school, buying less from vendors during the day.^{jjj}</p> <p>Majority of school principals in Maluku and South Sulawesi report that number of families having difficulty paying parent association fees on time or at all</p>	

^{ccc} Table 4.1 and 4.2. in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle 1999. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*. March

^{fff} Table 4.1 and 4.2. in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle 1999. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*. March

^{ggg} Table 4.1 and 4.2. in Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle 1999. *The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys*. March.

^{hhh} MIMAP 1999. "After the Crisis: A Look at the Elementary and Secondary Enrolment in the Philippines", Volume VI Number 2, June.

DECS, Research and Statistics Division, Office of the Planning Service in www.pdf.org.ph/mimap/mind7002.htm

ⁱⁱⁱ World Bank 1998d. *Social Impact of the East Asian Financial Crisis*. World Bank. September, p. 18.

^{jjj} World Bank 1998c. Rapid social assessments, January-April 1998 in *Social Impact of the East Asian Financial Crisis*. World Bank. September, p. 18.

	Jordan 1989	Argentina 1995	Mexico 1995	Thailand 1997	Indonesia 1998	Philippines 1998
					rose. Many principals also reported higher absences, which they attribute to children spending more time helping parents with economic activities. ^{kkk}	
Regional impact				Although crisis began in Bangkok, impact transmitted to rural areas through return of temporary migrants and deepening of recession. ^{lll} Worse affected area is Northeastern region, where per capita real income fell 32.4% in the first quarter of 1998. In Bangkok real per capital income fell 8.1%. ^{mmmm}	Crisis hit urban areas hard because of paralysis of formal economy. Java, hardest hit region, with both urban and rural areas affected. Effect on some islands including Sumatra, Sulawesi, and Maluku, minimal. ⁿⁿⁿ The immediate impact of crisis on poor was drought-induced, with drought depleting reserves of farming communities and postponing planting, reducing future yields of staples such as rice. Forest fires in Sumatra and Kalimantan reduced agricultural yields. ^{ooo}	Social impact felt mainly in areas outside the capital primarily because of El Niño-induced drought. ^{ppp}

^{kkk} www.worldbank.org/poverty/eacrisis/countries/indon/pov1.htm

^{lll} Kakwani, N. and J. Pathong 1998. "Impact of Economic Crisis on the Standard of Living in Thailand" *Indicators of Well-being and Policy Analysis*. Vol 2., No. 4, October, p. 4.

^{mmmm} Kakwani, N. and J. Pathong 1998. "Impact of Economic Crisis on the Standard of Living in Thailand" *Indicators of Well-being and Policy Analysis*. Vol 2., No. 4, October, p. 4.

ⁿⁿⁿ Poppele, Jessie, Sudarno Sumarto and Lant Pritchett 1999. *Social Impacts of the Indonesian Crisis: New Data and Policy Implications*. SMERU report, p. 4-6.

^{ooo} www.worldbank.org/poverty/eacrisis/countries/indon/pov1.htm

^{ppp} World Bank 1998b. *Philippines Social Expenditure Priorities*. World Bank Document. November.

6.12 There is no question that economic crises increase transition poverty.⁸ They can also increase persistent or chronic poverty because, for example, of their effect on the human capital of the poor. In Indonesia the dropout rate among 7- to 12- year-old children in the lowest income quartile rose from 1.3 percent in 1997 to 7.5 percent in 1998; among 13- to 19- year-olds the rate rose from 14.2 percent to 25.5 percent. The proportion of children among the poor not enrolled in school increased from 4.9 percent to 10.7 percent. Also in Indonesia weight of children under 3 fell and in Jordan child malnutrition rose from 6.4 percent in 1990 to 9.7 percent in 1991. Shocks to household income—which affect investment in schooling, nutrition, and health, potentially reducing the human capital of the poor—can hinder the ability of the poor to grow out of poverty.

6.13 The decline in the human capital of the poor can also adversely affect the performance of the economy in the medium run, especially when nutrition and education suffer during a recession. Recent research, for example, has found 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.⁹ Worsening macroeconomic conditions (short-term GDP shocks, volatility, and adverse trade shocks) explain 80 percent of the decline, according to one study.¹⁰ 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, resulting in worsening schooling indicators during economic downturns.¹¹ Simulation results suggest that gross secondary enrollment 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.¹² This potential effect on the economy as a whole is an important rationale for publicly funded safety nets, a topic discussed below.

Preventing crises

6.14 The evidence presented above should suffice to establish that crisis avoidance should be a top priority in any antipoverty strategy. There is wide agreement on the kind of macroeconomic and financial policies governments need to adopt to reduce vulnerability to policy-induced crises or adverse external shocks.¹³ Governments should avoid profligate fiscal and monetary policies, overvalued exchange rates, and unsustainable current account deficits—all problems that prevailed in the 1970s and 1980s.

6.15 The 1990s have seen different types of crises, in which weak banking systems and weak financial regulation in a world of large and volatile international capital flows have been the triggers. In this new wave of crises, restoring balance of payments equilibrium is closely linked to restoring equilibrium in the capital account by restoring

⁸ See, for example, the studies by Jalan and Ravallion, 1997 and Gaiha and Deolalikar 1993 for India.

⁹ Behrman, Duryea, and Székely 1999.

¹⁰ Author's calculations based on table 11 of Behrman, Duryea, and Székely 1999.

¹¹ Binder 1996.

¹² The economy's average growth rate for the 1982-1988 period was around zero. Jacoby and Skoufias 1997 find that in South India, children are often taken out of school in response to adverse shocks.

¹³ See Eichengreen 1999 and IDB 1995.

investor confidence. In order to prevent future crises, governments need to improve the prudential regulation and supervision of financial intermediaries, introduce new standards for data dissemination, and implement corporate bankruptcy reform.¹⁴

6.16 Two controversial policy issues are the choice of exchange rate regime and the use of capital controls. Fixed but adjustable pegs lost reputation and in some circles they have been discredited; the debate now concerns whether countries should use flexible exchange rates or hard pegs, such as a currency board, or give up their domestic currency altogether (“dollarization”). Supporters of flexible exchange rates argue that following a shock the necessary adjustments can take place more quickly and at a lower cost in terms of forgone output and unemployment than under a currency board. Since poverty is highly correlated with overall economic performance, the fact that output contraction is likely to be higher under a currency board or a dollarized economy than under a flexible exchange rate makes a flexible exchange rate regime more attractive in terms of protecting the poor. Supporters of hard pegs argue that the pegs shield countries from irresponsible fiscal or monetary policy, thereby reducing the likelihood of homemade crises. Supporters of “dollarization” argue that giving up the domestic currency would eliminate exchange rate risk and significantly reduce country risk, thereby diminishing the likelihood of both domestically and externally induced crises. In the end, the choice of exchange rate regime must be determined by the country’s history and its assessment of which of the two costs is higher—facing greater exposure to crises caused by contagion and mismanagement or having to absorb competitiveness shocks through a larger contraction in output.

6.17 Because pegs and flexible exchange rates are likely to result in different adjustments in the labor market, they have different effects on income distribution and poverty.¹⁵ Under a currency board and under a dollarized economy, labor markets are more likely to adjust through unemployment than through declines in real wages.¹⁶ A study has shown that when wages are rigid downward, flexible exchange rates that are targeted on the trade balance perform a social insurance function. In contrast, fixed exchange rates (of the adjustable or hard peg kind) result in unemployment (an inefficient outcome) and accentuate the distributional implications of a shock (real wages in the sector that suffered the shock in competitiveness fall by more than they would under a flexible exchange rate).¹⁷

6.18 The effect on poverty will depend on which group is hit hardest by the rise in unemployment or the fall in real wages. If the rise in unemployment or fall in wages is concentrated among young people who belong to well-off households, poverty will not be affected. If the rise in unemployment or fall in wages is concentrated among prime working-age males with low education, poverty will increase. During the 1995 crisis in

¹⁴ These are not simply matters for emerging markets. Banks and other creditors in developed countries have acted irresponsibly. In 1998, the US Federal Reserve was forced to orchestrate a bailout of Long-term Capital Management, a hedge fund based in Connecticut.

¹⁵ This in addition to the more standard distributional implications resulting from the pure relative gains accruing to the tradeable sector and to capital versus labor.

¹⁶ See the comparisons presented in Larrain and Velasco 1999.

¹⁷ Rodrik 1999. See also, Bourguignon, Lambert, and Suwa-Eisenmann 1996.

Argentina urban unemployment rose by 51 percent for males with low education (no or only primary education), and prime-working age (25-64) among whom unemployment reached 16.2 percent.¹⁸ For males with secondary education, unemployment rose 24 percent to 10.8 percent. For males with higher education, unemployment rose 28 percent to reach 5.5. Average wages changed very little; falling just 1 percent in 1995. Hence, one would expect to see the poor hurt more than proportionally. However, in the other countries the patterns may be different.¹⁹

6.19 The different labor market effects of hard pegs and flexible exchange rate regimes have to be taken into account in the design of social safety nets for the working poor. In countries in which the adjustment to an external shock takes place primarily through higher unemployment, employment programs, such as public works, should be the central component of the safety net. In countries in which adjustment takes place primarily through a change in real wages, transfer programs will be more important.

6.20 Two areas that require particular attention in promoting macroeconomic stability are liquidity and fiscal management strategies. To cope with the loss of confidence by international investors, governments must seek alternatives that guarantee their access to liquidity during hard times. For example, to ensure access to foreign currency in the event of a crisis,²⁰ Argentina negotiated a contingent credit line between the central bank and private international financial institutions.

6.21 In order to avoid the negative effects of volatility in short-term capital flows, countries may consider introducing capital controls. Controls on short-term capital inflows are often opposed on the grounds that they may deprive developing countries of much-needed capital. However, controls on short-term capital flows have been shown to affect the composition of capital flows in favor of more stable, longer-term investment.²¹

6.22 Governments can take additional steps to prevent adverse shocks from turning into full-blown crises. As part of their fiscal management strategy, one action would be to create a fiscal stabilization fund (box 6.2).

¹⁸ See Inter-American Development Bank 2000, Chapter 3.

¹⁹ All these results refer to the Greater Buenos Aires area only. Unfortunately, existing surveys for those years do not have national coverage.

²⁰ See Kiguel 1999.

²¹ See Edwards 1999.

Box 6.2 Smoothing public spending with fiscal stabilization funds²²

Stabilization funds are one way to ensure that resources generated during a period of high growth are saved so that public spending is smoothed across the economic cycle. If actual revenues exceed expected revenues, a significant proportion of the extra funds is diverted to a stabilization fund as insurance against a downturn. If actual revenues fall below expected levels, the stabilization fund covers part of the difference. The accumulated resources of the stabilization fund should be kept in the form of liquid foreign assets, so that they are readily available to act as a stabilizer following a negative shock.

Management of a stabilization fund should not be left to the discretion of the government of the day. Instead, legislation must be passed governing the funds' operation. The Copper Compensation Fund in Chile and the Oil Stabilization Fund in Colombia establish rules that determine how much of expected revenues can be incorporated into the budget and how much should go into the stabilization fund. The Chilean budget incorporates a conservative estimate of the price of copper. When the actual price exceeds the estimated price, money is transferred to the stabilization fund, government revenues are supplemented by the stabilization fund when the price of copper dips below the budgeted level. The Colombian stabilization fund smoothes revenues from oil production over time to take account of the pattern of exploration and discovery and the volatility of oil prices.

Stabilization funds are controversial. Critics of commodity-based stabilization funds claim that prices tend to follow a random walk. Even if the path is not purely random, they argue, prices do not quickly revert to the mean. As a result, funds could run out of money quickly. Supporters of the funds argue that even if reversion to the mean does not occur or occurs very slowly, a stabilization fund can still create "window of opportunity" for gradually introducing necessary changes in the tax and expenditure structure.

Another problem with stabilization funds is that they may be used to finance white elephants or simply vanished (corruption). The use of funds should be subject to close surveillance to minimize this.

6.23 In addition to stabilization funds, there are other contingent fiscal rules that may reduce the need to cut expenditures in bad times, when governments have limited access to financial markets. These contingent fiscal rules can incorporate actions on the revenue as well as the expenditure side. A contingent rule could specify the conditions under which the government would be allowed to change the tax rate in response to a shock. Some critics argue that the importance of tax smoothing over the economic cycle means that tax rates should not be used in contingent rules and that the government should instead let the deficit increase. If the government lacks access to financial markets, however, increasing the deficit may not be possible. Given credit constraints, a contingent tax rule may make sense.²³

Formulating a pro-poor crisis response

6.24 The key to reducing the potential social costs of economic crises lies in preventing them through skillful economic management. Some crises are likely to occur even in the absence of policy mistakes, however. A poverty-sensitive response to crisis should help the poor maintain adequate consumption levels, ensure that they continue to have access to basic social services, prevent permanent reversals in the accumulation of human and physical capital and thwart self-defeating behavior, such as criminal activity and child labor. Protecting the poor from sharp declines in short-term income through

²² Stein 1999.

²³ Governments can also use market-based approaches to hedge their fiscal position. For countries in which fiscal revenues are heavily dependent on commodities, insurance should be considered. Even if changes in the terms of trade do not pose a threat to fiscal stability, reducing with commodity price instability may help economies withstand terms of trade shocks.

appropriate macroeconomic responses and well-functioning safety nets enhances equity and can result in better growth outcomes.

6.25 *The macroeconomic policy mix.* Macroeconomic policy needs to be socially as well as economically responsible. A socially responsible crisis response avoids overshooting—implementing a monetary and fiscal policy that results in a larger recession than is needed to restore equilibrium. Of course, undershooting should be avoided as well. The subsequent costs of not taking adequate measures because they are painful, can also lead to disastrous situations.

6.26 Although it is often hard to identify what constitutes a policy package that overshoots, such situations do occur. In the East Asian crisis fiscal targets were revised three times during 1998, as authorities inside and outside the countries realized that the initial targets were set too high and would be self-defeating.²⁴ Furthermore, based on the trend of the cyclically adjusted deficit (both for revenues and expenditures), there are indications that Malaysia and the Philippines did not relax their fiscal policy even though when looking at the actual deficit this may seem the case. Overshooting can be transitory, but if the recession is protracted, investment in human and physical capital contracts, and investment in new technologies is put off, and the result can be a lower steady-state level of output when the economy recovers. The optimal combination of policies—that which achieves the necessary balance of payments adjustment with the smallest decline in output—depends on the initial conditions in the economy.²⁵

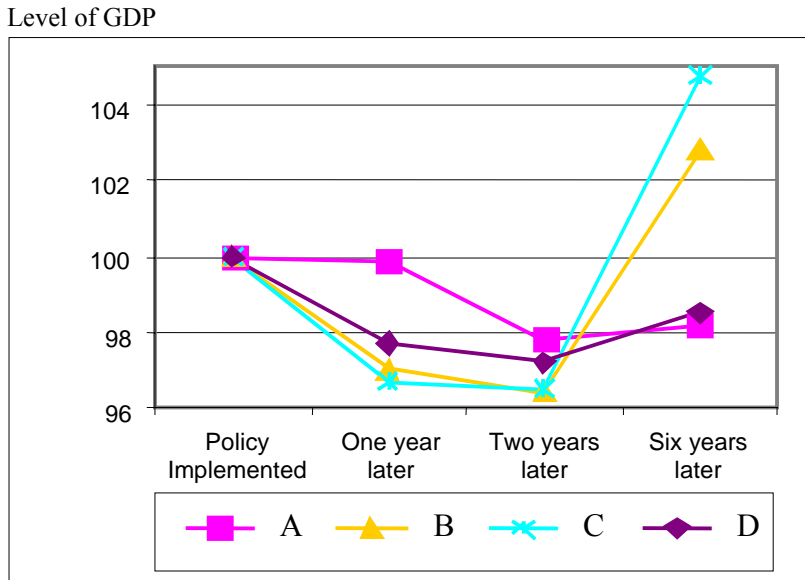
6.27 Do macroeconomic responses to crises that are optimal for the economy as a whole differ from macroeconomic policies that are optimal for the poor? Perhaps. First, different combinations of policies imply different costs for the poor than the nonpoor because of how the reduction in consumption per capita gets distributed.²⁶ As Lustig (1999) illustrates, even if different policy combinations do not result in different distributive outcomes, the poor and the nonpoor could well prefer different policies. The poor are more likely to prefer a gradual adjustment, while the nonpoor are more likely to prefer a program that reduces income more severely in the short run but yields higher growth in the medium run (figure 6.1 and table 6.4). This difference results simply from the fact that the losses in welfare will be higher for the poor. This difference may also reflect the fact that the poor live close to the subsistence level and apply the safety principle (minimizing the probability that their income falls below a certain level). Alternatively, it may indicate that the poor and nonpoor discount future consumption differently.

²⁴ World Bank 1998a. Global Economic Prospects 1998/9. Table 2-9. p. 86.

²⁵ See, for example, the discussion by Perry and Lederman 1999.

²⁶ See, for example, Bourguignon, and Morrisson, eds., 1992; World Bank Economic Review vol 5, no. 2, May 1991; Thorbecke 1991; de Janvry, Fargeix and Sadoulet 1991; Bruno, Ravallion and Squire 1998 in Tanzi and Chu, eds..

Figure 6.1 Short- and medium-term effects of alternative policies



Source: Calculated based on results from de Janvry, Fairgeix, and Sadoulet 1991.

Note: By assumption, all policies have no effect on distribution of income between poor and nonpoor.

Table 6.4 Ranking of alternative policies by the poor and nonpoor

Program	Ranking by net present value	Ranking by the utility of the poor	Ranking by the utility of the nonpoor
A	2	1	2
B	3	4	3
C	1	3	1
D	4	2	4

Note: By assumption, the consumption level of the poor relative to the nonpoor remains unchanged under all adjustment path. There is no consumption smoothing. Welfare (for both the poor and the nonpoor) is measured based on the following utility function:

$$U = \sum_i \delta^i [\log(c_i - \bar{c})] \text{ for } i=0,1,2 \text{ and } 6, \text{ where } \delta=0.95 \text{ and } \bar{c} = 19.25$$

Net present value calculations are based on a discount factor of 0.95 (implying a discount rate of 5.26 percent), a factor commonly used in macroeconomic models. Changes in the discount rate would alter the rankings of alternative adjustments paths for both the poor and the nonpoor, but differences in the rankings would still be likely.

6.28 The purpose of this discussion is not to extract specific recommendations on the macroeconomic policy mix²⁷ but to show how different combinations can result in paths that may be optimal for the economy as a whole but not for the poor (or at least not for all of the poor). The implication is not that pro-poor policymakers should adopt the path that is optimal for the poor (although there may be circumstances where doing so

²⁷ There is no optimal tool available to assess the distributive implications. However, there are three approaches that have been followed: the partial-equilibrium approach, Kanbur 1986; the Social Accounting Matrix/Computable General Equilibrium Approach, Taylor 1982; Dervis, de Melo and Robinson 1982; Thorbecke 1985; Bourguignon and Morisson 1992; and, the macro-dynamic models, Rios-Rull 1994.

would be warranted). Instead, policymakers should choose the policy package that is optimal for the economy as a whole and use safety nets to compensate the poor (at least in part) for the costs imposed on them by the policy.²⁸ Resources from multilateral institutions and donors can be used for this purpose during an adjustment. Multilateral institutions could induce countries to choose the optimal adjustment path but ensure that compensatory policies are implemented before the program is commenced. Safety nets should not be an afterthought.

6.29 The 1990s witnessed significant progress in incorporating social protection in adjustment programs, especially by multilateral institutions. The explicit protection of pro-poor programs was first introduced in the fiscal adjustments in Argentina and Mexico in 1995. The need to address the social dimensions of crises took on particular importance in the wake of the Asian crisis.

6.30 *Protecting pro-poor spending.* How governments raise revenues and cut public (nondebt) spending has important policy implications for who bears the burden of the adjustment process and whether the poor are protected. Spending on primary education, health care, and programs for the poor tend to be cut back along with other government expenditures in order to speed fiscal adjustment. Governments face enormous pressure from political interest groups during a macroeconomic crisis. Because poor people tend not to form organized groups and thus lack a political voice, cuts in social protection and other programs for the poor can be disproportionately larger.²⁹

6.31 To design a pro-poor fiscal adjustment, policymakers need to assess the distributional effects of spending programs. Programs that are particularly important for the poor—basic education, preventive health, water and sanitation, rural infrastructure, slum upgrading—should be protected from budget cuts. Spending on basic education and health care is progressive: the ratio of benefits to the lowest quintile to benefits to the highest quintile is 3.2 for education and 1.7 for health.³⁰ General food subsidies on basic staples might need to be maintained in the short run—even if their benefits leak to the nonpoor—unless they can be effectively replaced by targeted programs. It is also important to identify the kind of government spending programs that can be cut without causing large increases in poverty and inequality, so that spending on programs that benefit primarily the nonpoor can be slimmed down or postponed during times of fiscal austerity. The major obstacles here are political rather than economic: cutting middle-class programs and benefits to the rich to protect spending on the poor is no easy task. Governments need to win public support for the maintaining or expanding antipoverty programs following macroeconomic shocks.

6.32 One mechanism for protecting pro-poor government programs in the face of macroeconomic crises is earmarking revenues for specific purposes, such as employment programs or targeted human development programs. Too much earmarking, however, makes it difficult for governments to implement fiscal adjustment following a

²⁸ Gupta, McDonald, Schiller, Verhoeven, Bogetić and Schwartz 1998.

²⁹ See chapter 8.

³⁰ Yaqub 1999.

crisis. If a large share of total revenues is earmarked for specific spending programs, only a small portion of discretionary expenditures can be cut. Earmarking can also lead to the misallocation of public resources. If the government carries out the fiscal adjustment by increasing taxes, for example, the extra resources may be automatically channeled into specific spending programs. If the practice of earmarking is widespread, constituents and interest groups will put pressure on members of the government and the legislature programs that benefit them. There is thus a danger that protected expenditures come to reflect little more than the relative political muscle of different interest groups rather than programs that are effectively directed at the poor. The practice of earmarking revenues must therefore be very limited, and it must be carried out in a transparent way so that it is governed by considerations of efficiency and equity rather than by pressure from interest groups.

6.33 An alternative to earmarking is for the government and legislature to agree, during the budget approval process, on a ranking of current programs. As part of the budget appropriations process, different government programs could be placed in different categories indicating their relative importance. When spending cuts are needed, the order in which they are made would be determined by the priority assigned to each program. If such procedures were introduced, the government agencies could be required to provide evaluation reports on different programs to help policymakers identify social programs with high rates of return in order to protect them during a crisis.

6.34 Peru has introduced rules for protecting pro-poor programs as part of its public finance reform law (box 6.3) Its program combines fiscal rules with measures to increase fiscal transparency and accountability. The program creates a stabilization fund with the proviso that pro-poor programs should be protected. Although such budget protocols may not be classified as anti-poverty programs, they can have an important effect on poverty by protecting social spending, especially in times of fiscal retrenchment.

Box 6.3 Protecting the poor during a fiscal adjustment: Peru's fiscal prudence and transparency law

In 1999 Peru's Congress overwhelmingly approved the Fiscal Prudence and Transparency Law. The new law does much to ensure that social protection is maintained during a fiscal adjustment.

First, the law established fiscal rules regarding the maximum annual deficit of the consolidated public sector, which is capped at 2 percent of GDP in 2000, and 1.5 percent of GDP in 2001, and 1 percent of GDP thereafter. (In the event of a national emergency, international crisis, or fall in GDP, the fiscal deficit can increase to a maximum of 2 percent GDP). It also sets limits on increases in public spending and indebtedness.^{31 32}

Second, the law created a fiscal stabilization fund, to be funded from three sources: with all revenues that exceed the average level collected during the previous three years, three-fourths of future privatization proceeds, and half of all revenues from future concessions.³³ Up to 40 percent of the funds resources can be

³¹ The consolidated public sector includes the central and regional governments, decentralized agencies and national public enterprises. It excludes the local governments, their agencies and enterprises.

³² The Law establishes a maximum annual growth of nonfinancial public expenditures equivalent to the inflation rate plus two percentage points. This implies a future reduction in the relative size of the public sector in Peru.

³³ Savings accumulated in the Fund will not exceed 3 percent of GDP. Any excess will be transferred to the public pension fund or will be used to reduce public debt.

used each year if current revenues fall below the average level of revenues collected over the previous three years.³⁴

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

The law also introduced a multiannual (three-year) fiscal framework to be developed, approved, and published by the government, enhancing fiscal transparency in Peru. In addition, the law mandates that the Finance Minister submit to Congress and publish annual reports assessing the execution of the fiscal goals included in the multiyear framework, improving fiscal accountability in Peru.

Source: Ruprah 1999.

6.35 *Safety Nets.* Safety nets are important for several reasons. First and foremost, they can play a crucial role in reducing the effect of crises on the poor. Safety nets can help prevent irreversible damage to the human capital of the poor. They can compensate the poor so that their preferred adjustment path coincides with the one that is the most efficient for the economy as a whole. They can facilitate political acceptance of stabilization and reforms, preventing conflicts over distributions which can create stalemates, deepen economic crises, even cause the government to fall. Recent work has shown that the combination of weak institutions, including the lack of safety nets, has been responsible for many growth collapses (large falls in GDP over a protracted period) over the past 25 years.³⁵

6.36 Most developing countries lack effective safety nets that protect the poor from the output, employment, and price risks associated with systemic adverse shocks. Because institutional mechanisms to protect the poor from shocks are not in place before a crisis occurs, policymakers are often forced to improvise or use programs designed for purposes and beneficiaries other than those affected by the crisis. Emergency responses to emergency situations are often prepared without technical analysis needed to identify the socioeconomic profile of groups most vulnerable to the shocks and to evaluate the cost-effectiveness of different social protection options. Programs put in place and operating (on a small scale) before crises hit are better equipped to protect the poor than ad hoc emergency measures.

6.37 To be effective, safety nets should consider a wide range of programs (such as scholarships for poor children) including targeted human development programs, workfare or public works programs, cash transfers, food-related transfers, food subsidies, social funds, fee waivers for various essential services to mention some of the most commonly used. (These programs are discussed in chapter 5.) The appropriate mix of safety net programs will depend on the characteristics of the poor, the type of crisis confronted, and the government's institutional and administrative capacity.

6.38 The international community can play an important role by providing: policy advice, contributing financial support, and helping policymakers design and fund safety nets. Governments and multilateral institutions have a responsibility to develop analytical tools and data sources that allow them to assess the effect of alternative macroeconomic packages on the economy, including the effect on the incomes of the poor. International financial institutions can help countries design pro-poor fiscal

³⁴ Fund resources can also be used in the emergency cases described in footnote 2.

³⁵ Rodrik 1997.

adjustments and safety nets. For countries that are too poor to fund a safety net during a crisis, the international donor community could provide financing.

6.39 Information plays a central role in understanding the sources of changes in welfare and the impact of alternative responses, in informing societal debate on options, and in fostering accountability by increasing transparency and providing information on programs to civil societies and affected communities. Statistical services must provide and make public current information on the shifting pattern of welfare and vulnerability. Community-based organizations can play a crucial role in monitoring and rapidly responding to crises. Governments should use and promote these organizations and set up mechanisms through which they collect information to be processed and used for policy decisions. An example of such a mechanism was set up in Indonesia.

Natural Disasters

6.40 Economic development is repeatedly interrupted by natural disasters (earthquakes, droughts, floods, landslides, volcanic eruptions, windstorms, forest fires). Like economic crises, natural disasters can cause sharp increases in poverty in affected areas and slow the pace of human development. Like economic crises, natural disasters affect the poor in the short run and diminish their chances of growing out of poverty in the longer run.

6.41 Between 1988 and 1997, natural disasters were estimated to claim about 50,000 lives a year and cause damage valued at more than \$60 billion a year.³⁶ Dramatic as these figures are, the full human and economic costs are even greater. Human costs include injured and temporarily disabled people, refugees and permanently displaced people, broken families and the destruction of social networks, increased poverty and disease, and the psychological scars that traumatic events bring. Estimates of economic costs are based largely on direct physical impacts or losses of fixed capital and inventory. 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.

6.42 Over the past 10 years, the disastrous impact of atmospheric events—windstorms, hurricanes, flooding, drought, avalanches, and forest fires—have increased.³⁷ This could be due to social factors such as increasing settlements in hazardous areas. There are larger and more frequent El Niño events. Warming in the Atlantic sea-surface temperatures cause increased hurricane frequency and severity³⁸ and El Niño is associated with anomalous floods, droughts and storms.

6.43 Developing countries, especially their most densely populated regions, suffer the brunt of natural disasters. Between 1990 and 1998, 94 percent of the world's

³⁶ International Federation of Red Cross and Red Crescent Societies. *World Disasters Report 1999*, Tables 5 and 12, respectively.

³⁷ Freeman Paul 1999.

³⁸ Gray, William, Christopher Landesa, Paul Mielke and Kenneth Berry 1999.

568 major natural disasters and more than 97 percent of all natural disaster-related deaths occurred in developing countries (figure 6.2). Between 1990 and 1992 more than 500,000 people died, 80,000 were injured, and 300 million were affected by natural disasters causing more than 30 deaths in developing countries.³⁹ In Bangladesh alone, 3 storms and 4 floods, 1 tsunami, 2 cyclones, killed more than 400,000 people and affected another 42 million. Malawi, South Africa, Zambia, and Zimbabwe experienced severe droughts in 1992.⁴⁰ In Latin America and the Caribbean,⁴¹ major natural disasters associated with El Niño, Hurricane Mitch, and the Quindio earthquake in Colombia claimed thousands of lives and caused billions of dollars of damage between 1995 and 1998. In 1998 severe flooding of the Yangtze River caused devastation in China, and a major earthquake occurred in Armenia. In 1999 a major earthquake occurred in Turkey; a cyclone hit Orissa, India; floods inundated parts of Vietnam; torrential rains and catastrophic mudslides destroyed parts of Venezuela. The list goes on.

6.44 Developing countries are particularly vulnerable to natural hazards because they have limited capacity to prevent and absorb the adverse effects of meteorological and seismic conditions. People in low-income countries are four times more likely than people in high-income countries to die in a natural disaster, according to the International Federation of Red Cross and Red Crescent Societies.⁴² Research shows that despite similar patterns of natural hazards in Peru and Japan, annual fatalities in Peru average 2,900 while fatalities in Japan average just 63 a year.⁴³ In terms of aggregate economic effects, average costs as a proportion of GDP are 20 percent higher in developing countries than in industrial economies.⁴⁴ These facts suggest that poverty and lagging development greatly amplify the adverse effect of natural hazards.

³⁹ United Nations Environmental Program 1993.

⁴⁰ Benson and Clay 1998.

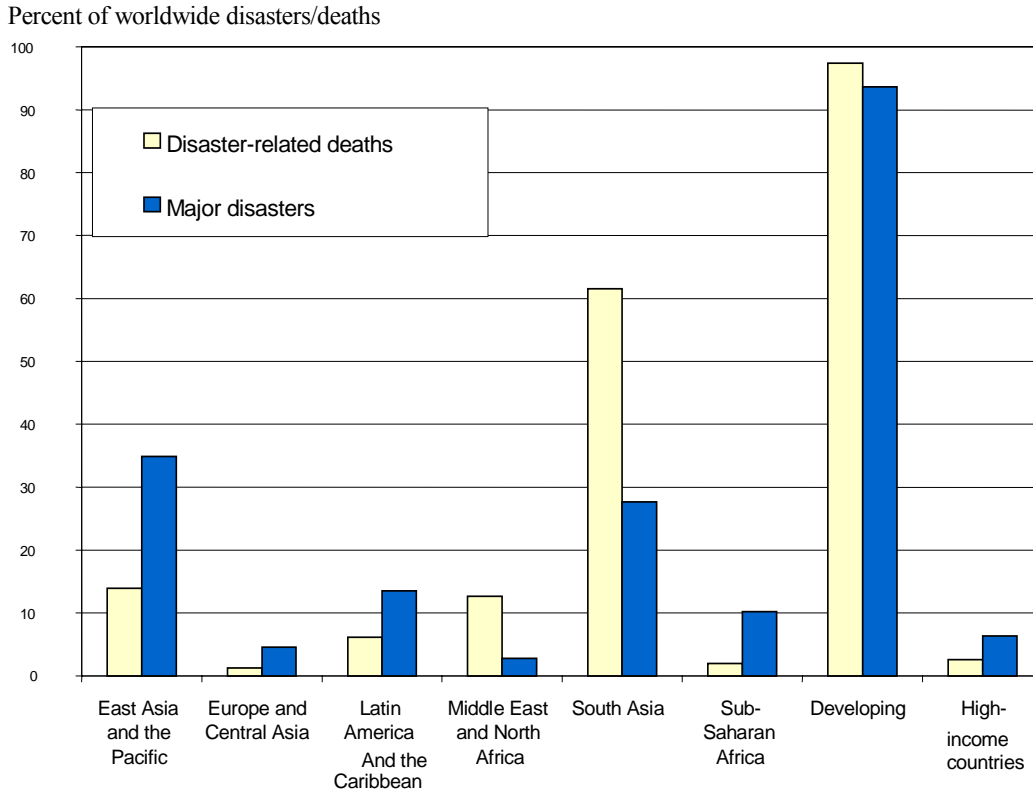
⁴¹ Office of U.S. Foreign Disaster Assistance, USAID. The OFDA database includes all natural hazards declared by the U.S. Government as disasters as well as major undeclared disasters causing a substantial number of deaths, injuries, and damage to infrastructure, agricultural production and housing.

⁴² International Federation of Red Cross and Red Crescent Societies 1993, p. 34.

⁴³ Anderson and Woodrow 1989.

⁴⁴ Funaro-Curtis 1982.

Figure 6.2 Share of worldwide natural disasters and disaster-related deaths by region, 1990-98



Note: A disaster was classified as major if it caused more than 50 deaths or affected more than 100,000 people.

Source: Office of U.S. Foreign Disaster Assistance (OFDA/CRED International Disaster Database).

6.45 Low-income individuals and communities are usually the primary victims of natural disasters.⁴⁵ This is due in part because the poor tend to be priced-out of the more disaster-proof areas and are crowded out to be in the risky sites. The incidence of disasters tends to be higher in poor communities, which are more likely to be located in areas vulnerable to bad weather or seismic activity. Natural disasters have severe adverse effects on the poor because loss of life, injury, and disability reduce poor families' main asset, their labor. Disasters also destroy poor households' natural, physical, and social assets, disrupt the flow of entitlements, and interrupt income flows.⁴⁶ The destruction of assets and long-term injuries can trap families in chronic poverty. Surges in malnutrition can doom the next generation of poor families. Poor people's access to basic services, such as water and sanitation, education, and health, can also be severely affected by a disaster. Natural disasters destroy roads, irrigation, and electrification projects, which have an immediate effect on rural poverty. Lending by international development banks to replace infrastructure destroyed or damaged by a natural disaster reduces lending for development.

⁴⁵ Bhatt 1999b.

⁴⁶ Benson 1997a; Benson 1997b; Benson 1997c.

6.46 Few studies have systematically analyzed effects of natural disasters on poverty. Those that have show that the negative effects on current and future living standards can be very significant. A study on the effect of the 1984 drought in Burkina Faso, for example, showed that the income of the lowest third of the rural population fell 50 percent in the poorest agroclimate (Sahelian zone) and 7 percent (Sudanian zone), and that the poor were disproportionately hurt by the drought.⁴⁷ The study also found evidence that the poor engaged in distress sales of livestock. Because they had very small stocks of animals to begin with, distress sales implied that their buffer stocks were being dangerously depleted. This depletion left the poor extremely vulnerable to drought—or other shocks—in the future, possibly trapping them permanently in dire poverty. Another example of asset reduction was found in Zimbabwe. In the aftermath of 1991-92 drought some households were forced to sell their goats—a form of savings used to pay for secondary education—to sustain short-term levels of consumption.⁴⁸ Households headed by women often fare worse than other households following a natural disaster, in part because of their smaller average resource base.⁴⁹ Customary or actual laws may exacerbate this gender bias. Among the Tonga of Zambia, the widow has no entitlement to any of the household's possessions.⁵⁰

6.47 Ecuador suffered large economic and social costs in 1997 as a result of El Niño.⁵¹ Nearly 300 people died, and an estimated 30,000 people lost their homes and were forced to rely on support from families, friends, and relief camps to survive. The rural sector suffered losses of \$112 million in forgone earnings (4.7 percent of agricultural GDP and 0.6 percent of total GDP), with most of the losses borne by poor farmers and agricultural laborers. Some 12,000 workers on banana and sugarcane plantations in the lowlands temporarily lost their jobs. And an estimated 2.5 million Ecuadorians in coastal regions were believed to be more vulnerable to disease in the aftermath of El Niño. According to one study, El Niño may have increased the incidence of poverty measured by the headcount ratio in affected areas in Ecuador by more than 10 percentage points. If these estimates are correct, the rate of poverty in the affected areas could be high as 84.3 percent, with 28.8 percent of the population living in extreme poverty. Evidence shows that people with low initial incomes, low educational levels, and inadequate access to economic and social infrastructure were most vulnerable to the effects of El Niño. The poor quality of infrastructure also increased the vulnerability of poor communities.

6.48 The effect of natural disasters on poverty can go well beyond the households directly affected. Large natural disasters can have spillover effects to other sectors of the economy and divert government resources from longer-term developmental objectives. Catastrophic natural disasters can affect overall economic performance because of the destruction of infrastructure. In Asia, for example, where 70 percent of the world's floods occur, the average annual costs of floods over the past decade was estimated at \$15 billion. According to some estimates, infrastructure loss accounts for 65

⁴⁷ Reardon and Taylor 1996.

⁴⁸ Hicks 1993.

⁴⁹ Bonitatibus and Cook 1996.

⁵⁰ Ainsworth and Over 1994.

⁵¹ Vos, Velasco and de Labastida 1999.

percent of all flood loss.⁵² Empirical studies find that investment in infrastructure is an important determinant of growth.⁵³ Major destruction of infrastructure can have an asymmetric effect on output in that the loss of output caused by the destruction of the infrastructure is greater than the increase in output caused by the eventual expansion of the infrastructure. The replacement of lost infrastructure in disaster-stricken countries has consumed significant lending resources of the multinational development banks. In Mexico, for example, as much as 30 percent of funds approved by the World Bank for rural water infrastructure development over the past decade have been diverted for postdisaster rehabilitation.⁵⁴

6.49 Research on Sub-Saharan Africa suggests that both agricultural GDP and overall GDP displayed some sensitivity to downward fluctuations in rainfall. In Senegal and Zimbabwe the effect of droughts spilled over to manufacturing⁵⁵ (box 6.4). The 1991-92 drought that affected southern Africa reduced growth rates in agricultural and total output in Malawi, South Africa, Zambia and Zimbabwe presumably increasing both rural and urban poverty.⁵⁶ Hurricane Mitch was associated with a 7 percent decline in agricultural output in Honduras in 1998, which probably resulted in a surge in poverty in rural areas.⁵⁷

Box 6.4 A setback for Zimbabwe's manufacturing sector; The effects of the 1991-92 drought

The value of Zimbabwean manufacturing output declined 9.5 percent in 1992, largely as a result of the 1991-92 drought. Foreign currency receipts from manufactured exports declined 6 percent as a result of the drought (a 2 percent reduction in total export receipts). Textiles (including cotton ginning), clothing and footwear, nonmetallic mineral products, metal and metal products, and transport equipment subsectors were particularly badly affected. The drought affected the manufacturing sector in a variety of ways:

- *Water shortages.* Most municipalities imposed rationing. Water shortages were particularly severe in the cities of Mutare, Chegutu, and Bulawayo.
- *Electricity shortages.* Reduced hydroelectric production resulted in load shedding, rationing, and higher electricity tariffs throughout the country. Load shedding imposed particular costs on subsectors with batch or continuous processing, where rationing discriminated against small manufacturers.
- *Input supply shortages.* Shortages of agricultural inputs hurt most agroprocessors. Large food-processing companies, such as grain millers, increased production, however, as imports were channeled through urban plants rather than processed in smaller rural plants. The meat processing industry faced increased supply of inputs, as the drought forced slaughtering rates to rise.
- *Reductions in demand.* Demand for both agricultural inputs and other basic consumer goods, such as clothing and footwear, fell, partly due to the contractionary effects of the drought. The ongoing structural adjustment program and increased penetration of the market by imports following recent trade liberalization also contributed to the decline in demand.
- *Unfavorable macroeconomic conditions.* Higher government domestic borrowing, in part to finance drought-related spending; higher rates of inflation; and higher nominal interest rates created an unfavorable operating environment. Subsectors in which working capital requirements increased sharply because of increases in prices by state-owned companies were particularly severely affected.

⁵² Freeman and MacKellar 1999a.

⁵³ World Bank 1994.

⁵⁴ Kreimer, Arnold, Barham, Freeman, Gilbert, Krimgold, Lester, Pollner and Vogt 1999.

⁵⁵ Benson and Clay 1998.

⁵⁶ Ibid p. 16.

⁵⁷ Inter-American Development Bank 2000, Chapter 2.

Although increased costs of production were partly passed on to consumers, manufacturers faced a deterioration in their financial viability. Partly as a consequence of the drought, the Zimbabwe Stock Market fell 62 percent in 1992, making it the worst-performing of 54 stock markets analyzed by the International Finance Corporation.

Source: Benson and Clay 1998.

Risk prevention and mitigation: reducing the vulnerability to disasters

6.50 Cumulative experience with natural disasters indicates that there is an urgent need to move from a fatalistic attitude to a preventive stance, from response to preparation, from the ex post mobilization of resources to ex ante programs that reduce and transfer risk. The international development lending community recognizes the importance to development of disaster risk reduction and is working to integrate comprehensive disaster risk management into all development investment decisions. There needs to be a focus on implementing mechanisms to increase public awareness of natural hazards, promote investment in disaster mitigation, and provide regulatory and financial incentives for safe construction and development. Prevention efforts can reduce the frequency and severity of disasters, save lives, protect property, and increase community involvement in the decisionmaking and implementation stages. An example of such an approach can be found in the new framework for disaster management adopted in Turkey in the aftermath of the 1999 earthquakes (box 6.5).

Box 6.5 Reducing and mitigating the risk of natural catastrophes; lessons from the 1999 earthquakes in Turkey

A powerful earthquake shook northwestern Turkey in the summer of 1999. About 20,000 people were killed, tens of thousands were injured, and several population centers were razed. Three months after the quake, a second quake hit, raising the number of victims and the social and economic losses. Industry and businesses in the areas hit by the earthquakes contributed more than 35 percent of the country's GDP. Destruction of these enterprises is thus likely to affect growth in Turkey for many years to come.

The international community assisted Turkey in the relief and immediate recovery activities. 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 aspect of the framework is the inclusion of prevention mechanisms—strategies to reduce similar losses in the future.

The reconstruction package focuses on immediate recovery needs, such as housing, business rehabilitation, health care facilities, roads, water supply systems, wastewater systems, and power distribution networks. But the project also seeks to reduce the country's vulnerability to disasters. This objective is achieved by enforcing construction codes and developing and implementing a national emergency management system, a land use planning system, a cadastre renovation and land management system, and a disaster insurance scheme.

The disaster management and response system seeks to create an emergency management structure that focuses on developing risk reduction strategies, increasing preparedness, and improving response and recovery activities. Improving land use planning and enforcing construction codes will reduce the vulnerability of the region to natural hazards. To achieve this goal, the project will support the review and modification of the current legal system, particularly the disaster, tender and development laws. It will also strengthen the capacity of municipalities to regulate, plan, and implement disaster-resistant development. This component of the project will also finance pilot projects in selected municipalities to help planning and building departments develop risk-based municipal master plans, establish means for effective building code implementation, develop municipal regulations to ensure that appropriate licensing procedures are followed, and develop programs for evaluating existing buildings.

The project will also support the government's earthquake insurance program by establishing and expanding its catastrophic risk management and risk transfer capabilities. The project will create an

insurance mechanism, which will make funds readily available to real estate tax-paying owners who need to repair or replace a dwelling destroyed or damaged by an earthquake. It will also reduce government fiscal exposure and the risk to the national economy due to major earthquakes, ensure the financial solvency of the insurance pool after all but the most catastrophic events, and reduce government financial dependence on donors following major earthquakes.

Source: Kreimer 1999.

6.51 Given the devastating effects natural disasters have on the poor, efforts to prevent natural hazards from turning into natural disasters should be part of any poverty-reduction strategy. Natural hazards can only rarely be prevented, but disaster mitigation and preparedness can lessen the magnitude of the destruction and disruption. Reducing physical vulnerability involves improving the quality of information used to assess the risks of occurrence and the impact of natural hazards; improving land use planning, water resource management, and watershed and coastal management; protecting critical infrastructure; improving disaster preparedness at the national, regional, and community levels; and creating an adequate institutional framework, including the laws and regulations affecting building codes, for implementing disaster mitigation strategies. Integrating natural resource conservation with disaster mitigation will usually help reduce vulnerability.

6.52 Reducing economic vulnerability involves encouraging—and even mandating—the purchase of private insurance for those who can afford it and identifying mechanisms of risk transfer to free up scarce government resources where public intervention is needed (box 6.6). Risk transfer mechanisms include the purchase of catastrophic reinsurance and the use of financial instruments, such as catastrophe bonds (box 6.7). Using such mechanisms can be more efficient than using resources from calamity funds to cover the costs of infrastructure repair and rehabilitation. Risk transfer mechanisms can free up government resources, which can be used to improve risk reduction and preparedness, particularly among the poor, and provide social assistance to the poor after a disaster hits. Calamity funds should focus on absorbing those catastrophic risks that cannot be absorbed by third parties, such as disaster-related damage affecting farmers and urban dwellers who are unable to afford private insurance, and providing social assistance for poor disaster victims.

Box 6.6 The Mexican Fund for Natural Disasters (FONDEN)

FONDEN stands as an interesting example in the developing world of an established disaster mechanism.

In terms of geography and climate, Mexico is one of the most diverse countries in the world. It is susceptible to a wide range of natural disasters such as floods, droughts, volcanic eruptions, earthquakes, fires, and tropical cyclones. Since 1980 direct damage from natural disasters totaled some US\$6.5 billion, and about 7,000 people have lost their lives. Apart from the direct losses, disasters disrupt the development process because the need for emergency and reconstruction financing diverts budgetary resources from their originally intended uses, disrupting priority investment programs. For example, in recent years, an estimated 30 percent of Government funding for World Bank water projects in Mexico was diverted to respond to emergencies.

As one of a number of steps taken by the Government to address the country's vulnerability to risks from natural hazards, in 1996 it established the FONDEN at the federal level, as a last resort source of financing for reconstruction of public infrastructure and protected areas, emergency response equipment, and disaster relief activities carried out by federal agencies or by state and municipal governments.

In 1998, following a period of particularly heavy losses from natural disasters, the Government embarked upon a process to use FONDEN more strategically to provide incentives for insurance use and mitigation by its beneficiaries. As a result, following widespread consultation with stakeholders, in March 1999 the Government modified FONDEN's operating guidelines to (i) establish greater clarity and transparency in the decision rules granting access to FONDEN, and the loss assessment process; (ii) limit the moral hazard faced by FONDEN, by encouraging greater use of private insurance by FONDEN's beneficiaries, and establishing clear cost-sharing formulae for FONDEN's financing of disaster losses falling under the responsibility of state and municipal governments; (iii) encourage mitigation, both within the reconstruction programs financed by FONDEN, as well as within the regular investment programs of FONDEN's beneficiaries; and (iv) refinance disaster response activities financed initially through emergency liquidity facilities to speed disaster recovery. These requirements are being formalized through the (voluntary) signature of individual Agreements between the Federal Government and the State Governments (and the Federal District), setting out the rights and responsibilities of the parties, including their acceptance of FONDEN's rules. Each Agreement will lead to the establishment of a Trust ("Fideicomiso Mixto Estatal") between the Federal Government and the respective State (or the Federal District) within which the agreed shares of financing to be paid by the various parties will be blended to achieve the agreed cost-sharing targets for disaster relief and reconstruction activities. Under the terms of each Trust, spending decisions and the contracting of eligible emergency activities will be made by a Technical Committee comprised of state and municipal representatives, acting with advice from federal entities.

If implemented successfully, these measures should result in increased transparency, accountability, and efficiency in the use of FONDEN's resources, and a redistribution of the costs of natural disasters between the various levels of the Mexican government and the private sector, and should over time result in a reduction in the share of such costs borne by the federal public sector.

Source: Barham 2000.

Box 6.7 Mitigating risk with catastrophe bonds

Many developing countries lack active private insurance markets. In these countries, the government may need to rely on other ex ante risk transfer mechanisms to provide financial protection against disaster losses.

Catastrophe, or cat, bonds represent an alternative to insurance. A typical cat bond would work as follows. Consider that a government wants to obtain 500 worth of protection against the possibility of damage to one of its water treatment plants from floods the next year. The chances that a flood will occur and cause damage of 500 is estimated by experts to be 1 in 100; there is 99/100 probability that there will be no damage to the water treatment plant. This provides an opportunity for an institutional investor to purchase a cat bond whose payoff is tied to the flood losses to the water treatment plant. In a simple one-period model the terms of such a cat bond would be as follows. The investor buys the cat bond at the beginning of the risk period at par. At the end of the risk period the investor will receive an uncertain dollar amount. With probability of 1/100, the government will incur damage of 500 to its water treatment plant. This will trigger losses on the bond in which case the investor would lose all his/her principal. The other 99 percent of the time, the investor gets back his or her principal plus interest which will normally be above the market rate to reflect the risk of losing its principal. The size of the bond would be lower if the government invests in flood-proofing the water plant. Hence, in addition to performing an "insurance" role, the cat bond would provide an incentive for the government to invest in mitigation efforts to save on interest payments.

One potential problem with catastrophe bonds is the difficulty of verifying the damage. The public agency operating the water treatment plant may exaggerate the damage in order to ensure that the bondholder pays. This problem, known as moral hazard, can be dealt with by tying payouts to an objective index (such as flood height) rather than to actual damage.

Source: Excerpted from Kunreuther 1999.

6.53 In reducing vulnerability to disasters particular attention must be given to initiatives that reduce the vulnerability of the poor at the local level. Complementing

initiatives at the national level, special efforts are needed to consult and involve communities at risk. Projects should provide economic incentives that encourage the poorest communities to adopt mitigation programs. Emergency evacuations and resettlements are often the most appropriate strategies in flood-prone or volcanic areas. These programs should be tailored to meet the needs of the poor. When resettlement is permanent, assistance to the poor should include subsidies for land purchases and credit for housing. In general, resettlements programs should include: (a) a plan of consultation and participation with the affected groups; (b) provisions to ensure the reestablishment or improvement of existing conditions in housing and basic services; and (c) measures to ensure that resettled people improve, or at least restore, their former living standards, income earning capacity, and production levels. Such a resettlement framework will enable resettlement to be used as an opportunity to foster community development and improve living standards for affected people

6.54 Neighborhood improvement programs constitute an alternative strategy when resettlement is not feasible. In most low-income areas, the poor build their housing themselves or with the help of the community, without technical assistance. Financing low-cost housing improvements in exchange for labor or training construction workers from the informal sector in mitigation techniques would help reduce building code violations in poor areas. Other important neighborhood upgrading activities include construction of drainage works and reducing risks of flooding and mudslides. In rural areas, programs should focus on environmental conservation and reforestation.

6.55 Low-cost initiatives can also be implemented to reduce the vulnerability of communities' income following natural disasters. Community food banks can be created in rural areas prone to droughts and floods. In the case of Burkina Faso local cereal banks were introduced to improve storage, lower the price of food, and stabilize food prices over the year, including during the drought season.⁵⁸ Agricultural cooperatives at the community level could also help small farmers obtain credit or crop insurance. Various strategies for diversifying economic activities at the community level could also be promoted.

6.56 Key to reducing the vulnerability of the poor to natural disasters is ensuring the full involvement and participation of communities.⁵⁹ Experience has shown that comprehensive vulnerability reduction tools become more useful when they are localized. Tools to reduce vulnerability become more effective when users are conceived as citizens. In developing countries, many people do not have voter cards, ration cards, labor identity cards, property titles, or wage slips from formal sector employers. As a result, these people do not exist as citizens in the eyes of the authorities, who need such documentation before including them in rehabilitation projects or preparedness planning. Vulnerability reduction tools should provide all citizens with documentation so that they can be fully included in all relevant programs. Tools that recognize and listen to the voices of victims as citizens are more effective because they are inclusive tools are transparent to many and hold users accountable for outcomes.⁶⁰ Community involvement is particularly important

⁵⁸ Anderson 1989, pp. 185-207.

⁵⁹ Shah 1999.

⁶⁰ Excerpt from Bhatt 1999a.

in developing early warning systems, which must integrate high-tech information technology with community-based early warning systems.

Coping with natural disasters

6.57 The Emergency Phase following a disaster should focus on providing food, water, shelter, and medicine. To do so, temporary rehabilitation of relevant infrastructure, such as roads and water supply, is critical. Assessment of priorities based on the magnitude of damages and the levels of social vulnerability is also crucial. Emergency assistance should also include emergency employment programs to provide sources of livelihood to people who can no longer support themselves. These should also include people affected by the less strident effects of a disaster, such as the poor fishermen in Ecuador and Peru, who fell deeper into poverty as fish fled the warm waters caused by El Niño. Public work programs that can build social or community infrastructure or help in clean up and reconstruction can be a good option.

6.58 A key to successful community recovery is a quick transition to financially sustainable solutions that minimize distortion of markets. Policymakers should consider the effect of prolonged massive food donations or food-for-work programs on local food prices and consumer dependence on food aid.⁶¹ The use of local markets, subsidies, and poverty-targeted food stamps programs may be more appropriate once the emergency subsidies.

6.59 Following a widespread natural disaster, national and local governments need to establish a macroeconomic management scheme to tackle the expected shortfall in tax revenues, increase in public spending, decline in exports, and rise in imports. For heavily indebted countries, the task of macroeconomic management is made more difficult by the need to service—and possibly reschedule—foreign debt. Recovery and reconstruction also require a refocusing of social spending and expansion of social assistance programs. Policymakers need to ensure that repairing critical economic infrastructure (especially infrastructure linked to export-oriented sectors), rehabilitating social infrastructure, and providing social assistance in the poorest and most affected areas are made top priorities.

6.60 Targeted international assistance can help maintain macroeconomic stability, accelerate the recovery process, and protect the poor. The World Bank set up a \$200 million emergency flood recovery credit for Bangladesh following the 1998 floods. The quick-disbursement program was designed to finance the purchase of commodities needed for rehabilitation: grain imports to prevent inflation in food prices, inputs for agricultural recovery, and machinery and raw materials for the labor-intensive manufacturing sector. The credit helped maintain macroeconomic stability by preventing the depletion of foreign exchange reserves and supporting the recovery of the export sector.⁶²

6.61 Where necessary, international development banks and the International Monetary Fund can provide debt relief for countries badly hit by natural disasters.

⁶¹ Barraclough and Moss 1999.

⁶² World Bank 1998e.

Following Hurricane Mitch, the multilateral financial institutions designed relief programs for Honduras and Nicaragua under the Highly Indebted Poor Country initiative.⁶³ To provide timely 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 the adjustment process restricted the government's ability to raise external financing for drought-related measures because of the lack of counterpart resources in the local currency. As a result, international funds were not fully utilized.⁶⁴

6.62 The top priority during the reconstruction phase must be providing targeted assistance to victims who are poor. This includes providing permanent housing, reviving rural areas and agricultural production, providing adequate social infrastructure for the resumption of education and health services, expanding the set of income-earning opportunities and the poor's ability to rebuild their assets through workfare and microcredit programs, and providing social protection for the most vulnerable.

6.63 Finding permanent solutions for homeless and displaced people is critical. Relying on temporary housing construction to solve the problem of homelessness can be a costly strategy, and such housing often becomes unhygienic and unsafe. Temporary structures are often designed for several families and are often built on land not intended to be transferred to the temporary occupants. As a result, displaced people who face an extended stay in temporary housing often choose to return to risky areas or occupy land illegally. Temporary shelters should be phased out gradually. New residential areas need to be identified in order to prevent poor displaced people from rebuilding on unsafe land. For the poorest of the poor, assistance could include rent subsidies and travel assistance to help families join relatives living in unaffected areas, or credit for purchase of land.

6.64 Budgetary problems and poor targeting are likely to be particularly acute in the aftermath of a disaster. International assistance, channeled through local NGOs, may be necessary to help rebuild housing. A reconstruction program supported by Caritas, an NGO, successfully mitigated earthquake-related risks in a poor area of Peru that had been partially destroyed by an earthquake in 1990. After consultation with the community, Caritas decided to construct housing out of *quincha*, a local material capable of withstanding earthquakes. It also opted to direct assistance to the neediest families, such as households headed by women, by providing them with materials in exchange for their participation in communal work. An earthquake in 1991 demonstrated the advantage of using *quincha* after most houses resisted the earthquake, which registered 6.2 on the Richter scale.⁶⁵

6.65 Given the disastrous impact of hurricanes, floods, and droughts on agricultural production and the income of small farmers, a comprehensive approach to revive agricultural production and generate nonagricultural employment in poor rural areas is needed after a disaster. The rehabilitation and improvement of road infrastructure is a crucial step in restoring the link to national markets. Credit and subsidies for the

⁶³ Oxford Analytica Nov. 10, 1998.

⁶⁴ Benson and Clyde 1998 p. 46.

⁶⁵ Schilderman 1993.

purchase of inputs can be extended to small farming units, and targeted distribution and marketing plans can be introduced. New crops and agricultural methods should be introduced to avert a food crisis and increase the future resilience of agricultural production in disaster prone areas. In areas where arable soil has been destroyed, farmers will need to be relocated or provided with sustainable alternative income-generating opportunities. Land banks, which provide credit to landless peasants to purchase land, can be used.⁶⁶

6.66 Given their experience in building infrastructure and providing social services to communities, social investment funds could be used to channel funds expeditiously. These funds could identify local spending priorities and minimize corruption or misuse of funds. The Honduras Social Investment Fund effectively performed such a role in the aftermath of Hurricane Mitch. The fund rapidly put in place a regionally decentralized operating structure and responded to the pressing needs of local municipalities and communities. The procedures established by the fund immediately after the disaster simplified project preparation and authorization and expedited contracting and disbursement of funds.⁶⁷

6.67 A World Bank mission that visited the sites served by the Honduras fund was impressed by its achievements, financing the opening up of several important secondary roads, beginning the rehabilitation of some water systems in secondary towns, and undertaking cleanup activities in almost all of the areas visited. The mission also witnessed strong participation by mayors and citizens' committees. The close monitoring of private contractor equipment and local residents employed by the fund in cleanup activities was particularly impressive.

6.68 The experience of the Honduras Social Investment Fund provides some lessons on how to improve these funds. These include providing adequate financial resources to meet postdisaster needs, making sure that investment projects are not restricted to rehabilitation and cleanup but include both expansion of existing facilities and new construction and expanding their mandate to allow them to provide direct social assistance to vulnerable people.⁶⁸

6.69 Workfare programs should be introduced or expanded in disaster areas in conjunction with reconstruction operations. After the floods in Chiapas, Mexico, a program of temporary employment provided families with much needed additional income by hiring them to work in reconstruction programs one day a week.⁶⁹ In northeast Brazil the Program Frente de Trabalho provides similar employment opportunities in periods of drought. During the 1979-84 drought, the program employed up to 3 million workers in construction and drought-related jobs.⁷⁰

⁶⁶ Barraclough and Moss 1999, p. 37.

⁶⁷ Davis and Oliver-Smith 1999.

⁶⁸ Davis and Oliver-Smith 1999.

⁶⁹ Remarks of Esteban Moctezuma, Minister of Social Development, Mexico, at the IDB Conference on Social Protection and Poverty, February 1999.

⁷⁰ Magalhaes and Glantz 1992, p. 25.

6.70 Microcredit institutions can play an important role in fending off a credit crunch during the reconstruction phase. Given that most potential borrowers are likely to be insolvent, however, such institutions are likely to need international support. Their operations should be extended after a disaster to enable small entrepreneurs to restart their businesses.

6.71 The most vulnerable groups—women, children and older adults—must receive special attention. Involving women in the management of shelters, establishing workfare programs that are adapted to women's needs, and ensuring a gender-neutral housing acquisition process are likely to improve the recovery of women and households headed by women. Expansion of early childhood development programs, in particular mother and child feeding programs, might also be considered. To avoid loss of human capital, the rebuilding of schools should be a top priority. Poor families should receive cash transfers to encourage them to keep children in school. Where children need to participate in recovery efforts, schools can adopt flexible schedules.

6.72 The reconstruction period provides an opportunity to reduce vulnerability to natural events. Targeted assistance at the local level, for the most affected populations, and consultation efforts with affected communities and households should be a key goal. Evidence shows that community participation in the decisionmaking and implementation process improves results (box 6.7). Including local people in reorganizing activities can foster leadership and promote a sense of solidarity, helping to reduce the psychological trauma caused by natural disasters.⁷¹

Box 6.7 Community participation in postdisaster reconstruction: lessons learned from the Maharashtra emergency earthquake rehabilitation program

On September 30, 1993, an earthquake struck the Indian state of Maharashtra, killing about 8,000 people and damaging some 230,000 houses in Latur, Osmanabad, and eleven other districts. With the help of the World Bank, the government of Maharashtra created the Maharashtra Emergency Earthquake Rehabilitation Program (MEERP). The program institutionalized community participation and ensured that beneficiaries were formally consulted at all stages of implementation of the program. The document proposed that every village create a village-level committee headed by the *Sarpanch* (head of village council), and that membership on the committee include women and disadvantaged groups. Consultative committees were also proposed at the level of the *taluka* (an administrative unit that includes several villages) and the district. To ensure that the village-level committees interacted with the project management unit at all levels, the government of Maharashtra took an innovative step and appointed two respected community organizations, the Tata Institute of Social Sciences and the Society for Promotion of Resource Area Centre, to carry out the process.

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

Relocated villages

Housing construction was organized primarily by engineering consultants and contractors, except in the cases of a few smaller villages, which were handled by donor organizations and NGOs. While the beneficiaries were not directly involved in construction, they were heavily involved in the decisionmaking stages, including the selection of beneficiaries, identification of relocation sites, layout of the village, design

⁷¹ Levav 1999.

of houses, and provision of amenities. At these stages, government officials, engineering consultants, and community participation consultants had extensive consultations with the entire village community. Final decisions were made in a plenary meeting of the village. Rural resettlement planners worked with the engineering consultants to facilitate the process of community participation.

The open consultation process led to frequent changes in the layout of villages and the design of houses and in interference in actual construction. It was originally envisaged that the plots would be allotted to the beneficiaries before actual construction began. This process led to conflicts within some villages, as certain plot locations were preferred over others. When plot allotment caused excessive delay in construction, the process was postponed until construction was completed. During the construction stage, only the village-level committee and the community participation consultants interacted with the project management unit regarding the progress and problems of reconstruction. Once the construction was completed, the allotment of houses to beneficiaries was again taken up, in open consultation with the entire village.

Reconstructed, repaired, or strengthened villages

Homeowners took on the responsibility of repairing, retrofitting, and strengthening their houses, with materials and financial and technical assistance provided by the government. The project management unit opened a bank account for each of the 190,000 eligible homeowners, who received coupons for construction materials. A junior engineer appointed at the village level provided technical assistance to the homeowners to ensure that the houses were earthquake resistant.

Because not all residents in a village were eligible to participate in the program and the beneficiaries of the program were dispersed over 1,500 villages, the VLC was not an appropriate vehicle for involving community members. Instead, each village formed a beneficiary committee to interact with the project management unit. In most villages, these committees consisted of women's self-help groups. The community participation consultants appointed one communicator, generally a woman, to interact with each of the self-help groups. Training programs were also organized in villages with large numbers of beneficiaries, where residents were informed of their entitlements and the processes to be followed. After a year and a half, the program was in full swing. With such a large number of villages and beneficiaries involved, the program took on the dimensions of a housing movement, renewing the housing stock in the entire area.

A peoples' project

As the MEERP progressed and results materialized, community participation in the rehabilitation received greater acceptance. While project management unit officials were initially skeptical of the community participation process, they later came to recognize it as an effective tool for dealing with difficulties that arose during implementation.

Participation also had a positive psychological effect on communities. Involving local people in the reconstruction process helped them to overcome their trauma. Recognizing the psychological importance of the reconstruction program the government began reconstruction in small villages even before the rehabilitation program began, appealing to donors, corporate bodies, NGOs, and religious organizations to "adopt" villages for reconstruction. Some of these organizations also worked on social issues, such as schooling for children and campaigns against alcohol consumption.

Over time the MEERP became a people's project. The participatory process opened many informal channels of communication and accessibility between the people and the government, helping to narrow the gap between the two. Beneficiaries became extremely conscious of their entitlements and worked hard within the process to secure them. Individuals who felt their grievances were not addressed appropriately at the village and *taluka* level could approach the district authorities and the government in Mumbai. Information on the program, its processes, and mechanisms for redress was accessible, and the level of awareness was high.

Source: Vatsa 1999.

References

- Ainsworth, M. and M. Over. 1994. "AIDS and African Development." World Bank Research Observer 9(2):203-40.
- Altimir, Oscar and Luis Becaria. 1998. Política Macroeconómica y Pobreza en América Latina y el Caribe, in Ganuza, Taylor and Morley. "Efectos de los Cambios Macroeconomicos y de las Refomas Sobre la Pobreza Urbana en la Argentina".
- Anderson, Mary and Peter Woodrow. 1989. "Rising from the Ashes: Development Strategies in Times of Disaster." UNESCO, Paris.
- Aristy and Dauhajre. 1998. "Efectos de las Politicas Macroeconomicas y Sociales Sobre la Pobreza en la República Dominicana" IADB-SDS POV, Washington, D.C.
- Barham, Christopher 2000. "The Mexican Fund for Natural Disasters (FONDEN)". Note prepared for the World Development Report 2000/2001. Washington, D.C. Mimeo.
- Bank of Thailand, Website. (6) <http://www.bot.or.th>
- Barraclough, Solon and Daniel Moss 1999. "Toward Greater Food Security in Central America Following Hurricane Mitch." OXFAM America.
- Barros, Mendoca, and Rocha. 1995. "Brazil: Welfare, Inequality, Poverty, Social Indicators, and Social Programs in the 1980's" in Lustig ed. *Coping With Austerity*. The Brookings Institution.
- Barry Eichengreen. 1999. *Toward a New International Financial Architecture. A Practical Post-Asia Agenda*. Institute for International Economics. Washington, D.C.
- Behrman, Jere R., Suzanne Duryea, and Miguel Székely. 1999. "Aging and Economic Options: Latin America in a World perspective."
- Benson, Charlotte. 1997a. "The economic impact of natural disasters in Fiji." Overseas Development Institute. Working Paper No. 97.
- Benson, Charlotte. 1997b. "The economic impact of natural disasters in Vietnam." Overseas Development Institute. Working Paper No. 98.
- Benson, Charlotte. 1997c. "The economic impact of natural disasters in Philippines." Overseas Development Institute. Working Paper No. 99.
- Benson, Charlotte and Edward Clay. 1998. "The Impact of Drought on Sub-Saharan African Economies: a Preliminary Examination." World Bank Technical Paper No. 401. Washington, D.C.

- Bhatt, Mihir. 1999a. "Vulnerability Matters". Paper presented on The International Decade for Natural Disaster Reduction (IDNDR) Programme Forum, July 8th, United Nation Development Programme, Geneva.
- Bhatt, Mihir. 1999b. "Natural Disaster as National Shocks to Poor and Development". Note for the Summer Research Workshop 1999, Poverty and Development, World Bank, July 6 to 9, 1999. Washington, D.C.
- Binder, Melissa. 1996. "Schooling Indicators During Mexico's Lost Decade." University of New Mexico. Draft.
- Bonitatibus, E. and J. Cook. 1996. "Incorporating Gender in food Security Policies: A Handbook for Policymakers in Commonwealth Africa." London: Commonwealth Secretariat.
- Bourguignon and Morisson (eds). 1992. "Adjustment and Equity in Developing Countries: A New Approach." OECD.
- Bourguignon, Francois, S. Lambert, and A. Suwa-Eisenmann. 1996. "Distribution of Export Price Risk in a Developing Country." Center for Economic Policy Research Discussion Paper No. 1482.
- Bruno, Michael, Martin Ravallion and Lyn Squire. 1998. "Equity and Growth in Developing Countries: Old and New Perspectives on the Policy Issues", in V. Tanzi and K. Chu, eds., *Income Distribution and High-Quality Growth*. The MIT Press. Cambridge, Massachusetts. London, England.
- Bureau of Labor and Employment Statistics in www.pdf.org.ph/mimap/v610399a.htm
- Davis, Shelton and Anthony Oliver-Smith. 1999. "Post Hurricane Mitch Rehabilitation and Reconstruction Mission." World Bank, Washington, D.C.
- De Janvry, Alain A. Fargeix and E. Sadoulet. 1991. "Political Economy of Stabilization Programs: Feasibility, Growth and Welfare." *Journal of Policy Modeling*. 13(3) Fall.
- De Janvry, Alain and Elisabeth Sadoulet. 1999. "Growth, Poverty and Inequality in Latin America: A Causal Analysis, 1970-94." Inter-American Development Bank Conference on Social Protection and Poverty, February.
- DECS, Research and Statistics Division, Office of the Planning Service in www.pdf.org.ph/mimap/mind7002.htm
- Deininger, Klaus and Lyn Squire. 1996. "Measuring Income Inequality: a New Database." Development Discussion Paper No. 537. World Bank, Washington, D.C.

- Dervis, Kemal, Jaime de Melo and Sherman Robinson. 1982. "General Equilibrium Models for Development Policy." A World Bank Research Publication. Washington, D.C.
- Easterly, Islam, and Stiglitz. 1999. "Shaken and Stirred: Volatility and Macroeconomic Paradigmas for Rich and Poor Countries." XII World Congress of the IEA, Buenos Aires, August.
- ECLAC. 1989. "Antecedentes Estadísticos de la Distribución del Ingreso en el Perú, 1961-1982". Serie Distribución del Ingreso No. 8.
- ECLAC. 1993. Antecedentes Estadísticos de la Distribución de Ingreso en los años 80 serie Distribución del Ingreso No. 13.
- ECLAC. 1995. Human Settlements: The Dhelter of Development.
- ECLAC. 1997. Social Panorama of Latin America 1996.
- ECLAC. 1999. Social Panorama of Latin America 1998.
- Economic and Political Weekly Research Foundation. 1998. Marathwada Earthquake, Efforts at Participatory Rehabilitation and the Role of Community Participation Consultants, Mumbai.
- Edwards, Sebastian. 1999. "How Effective are Capital Controls." *Journal of Economic Perspectives*. September.
- Escobal, Javier, Jaime Saavedra and Maximo Torero. 1998. "Los Activos de los Pobres en el Perú." Grupo de Analisis para el Desarrollo. Documento de Trabajo 26. Lima.
- Estes, Richard. 1988. "Trends in World Social Development: The Social Progress of Nations, 1970-1987." New York: Praeger.
- Estes, Richard. 1996. "Social Development Trends in Asia 1970-1994: The Challenge of a New Century." *Social Indicators Research* 37(2/February).
- Estes, Richard. 1998. "Trends in World Social Development 1970-1995 Development Challenges for a New Century." *Journal of Developing Societies* 14(1/April).
- Fields, Gary S. 1991. "Growth and Income Distribution." in George Psacharopoulos (ed.) *Essays on Poverty, Equity, and Growth*. Pergamon Press.
- Fiszbein et al. 1993. "La Pobreza y la Distribución de los Ingresos en América Latina: Historia del Decenio de 1980" LAC Technical Department Report No. 27. World Bank, Washington, D.C.

- Frankenberg, Elizabeth, Duncan Thomas and Kathleen Beegle. 1999. The Real Costs of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Surveys. Mimeo. March.
- Freeman, Paul. 1999. "The indivisible face of disaster" in World Bank, Investing in Prevention. A Special Report on Disaster Risk Management. Washington, D.C.
- Freeman, Paul and Landis MacKellar. 1999a. "Impact of Natural Disasters on Infrastructure" note prepared for the World Development Report. Washington, D.C.
- Freeman, Paul and Landis MacKellar. 1999b. "Economic Impacts of Natural Disasters." note prepared for the World Development. Washington, D.C.
- Funaro-Curtis, Rita. 1982. "Natural Disasters and the Development Process: a Discussion of issues."
- Gaiha, Raghav and Anil Deolalikar. 1993. Persistent, Expected and Innate Poverty: Estimates for Semi-arid Rural South India, 1975-1984. *Cambridge Journal of Economics* 17(4)December: 409-21.
- Gray, William, Christopher Landsea, Paul Mielke and Kenneth Berry. 1999. "Summary of 1999 Atlantic Tropical Cyclone Activity and Verification of Author's Seasonal Activity Prediction." Department of Atmospheric Science. Colorado State University. Mimeo.
- Grupo de Análisis para el Desarrollo. 1998. Documento de Trabajo N°26. "Los activos de los Pobres en el Perú". Lima.
- Gupta, S., C. McDonald, C. Schiller, M. Verhoeven, Ž. Bogetić and G. Schwartz 1998. "Mitigating the Social Cost of the Economic Crisis and the Reform Programs in Asia". IMF Paper on Policy Analysis and Assessment. June.
- Hicks, D. 1993. "An evaluation of the Zimbabwe Drought Relief Program 1992-1993: The Roles of Household Level Response and decentralized Decision Making." World Food Programme, Harare.
- Hopenhayn, H. and J.P. Nicolini. 1999. "Heterogeneity and Optimal Unemployment Insurance." Paper presented at the Conference on *Social Protection and Poverty*, Inter-American Development Bank, Washington, D.C. February 4 and 5. (97)
- INEGI (Instituto Nacional de Estadística Geografía e Informática), Mexico. Encuesta Nacional de Ingresos y Gastos de los Hogares 1992, 1994 and 1996. CD-ROM (10) (2.9) (1.9)
- Instituto Nacional de Estadística y Censos, Argentina
- Inter-American Development Bank 1995.

- Inter-American Development Bank 2000. "Social Protection for Equity and Growth". Poverty and Inequality Advisory Unit, Sustainable Development Department.
- International Federation of Red Cross and Red Crescent Societies 1993.
- International Federation of Red Cross and Red Crescent Societies 1999. World Disasters Report.
- Jackoby, Hanan and Emmanuel Skoufias. 1997. "Risk, Financial Markets and Human Capital in a Developing Country." Draft.
- Jalan, Jyotsna and Martin Ravallion. 1997. "Are the Poor Less Well-Insured? Evidence on Vulnerability to Income Risk in Rural China." Policy Research Working Paper 1863. World Bank, Washington, D.C.
- Kakwani and Prescott. 1999. "Impact of Economic Crisis on Poverty and Inequality in Korea." World Bank, Washington, D.C. Mimeo.
- Kakwani, N. 1999. "Poverty and Inequality during the Economic Crisis in Thailand." *Indicators of Well-being and Policy Analysis*. NESDB/ADB. 3(1/January).
- Kakwani, N. and J. Pathong. 1998. "Impact of Economic Crisis on the Standard of Living in Thailand" *Indicators of Well-being and Policy Analysis* 2(4/October).
- Kakwani, N. 1998. in Paitoonpongk Srawooth and Cheerapun Gullaprawit. *An Inventory of Research, Monitoring and Government Safety News with Reference to the Social Impacts of the Economic Crisis: Thailand*.
- Kanbur, R. 1986. "Structural Adjustment, Macroeconomic Adjustment and Poverty: A Methodology for Analysis." CEPR Discussion Paper Series 132, London.
- Kato, Toshiyasu. 1999. "The Asian Financial Crisis and Southeast Asian Transitional Economies: Impacts, Policy Responses, and Lessons." Asian Development Bank.
- Kiguel, Miguel. 1999. "The Argentine Currency Board", Documento de Trabajo #152, Universidad del CEMA, Buenos Aires.
- Kreimer, Alcira and Edward Echeverria. 1991. "Case Study: Housing Reconstruction in Mexico City," in Kreimer, Alcira and Mohan Munasinghe, ed., *Managing Natural Disaster and the Environment: Selected Materials from the Colloquium on the Environment and Natural Disaster Management*. Washington, D.C.: World Bank.
- Kreimer, Alcira, Edward Echeverria, and Martha Preece. 1991. "Case Study: Reconstruction after North China's Earthquake," in Kreimer, Alcira and Mohan Munasinghe, ed., *Managing Natural Disaster and the Environment: Selected Materials from the Colloquium on the Environment and Natural Disaster Management*. Washington, D.C.: World Bank

- Kreimer, Alcira, Margaret Arnold, Christopher Barham, Paul Freeman, Roy Gilbert, Frederick Krimgold, Rodney Lester, John D. Pollner, Tom Vogt. 1999. "Managing Disaster Risk in Mexico: Market Incentives for Mitigation Investment." World Bank, Washington, D.C.
- Kreimer, Alcira. 1999. "Learning lessons from the earthquake in Turkey." Note prepared for the *World Development Report 2000/1*. Mimeo.
- Kunreuther, Howard. 1999. "Incentives for Mitigation Investments and More Effective Risk Management. The Need for Public-Private Partnerships." Center for Risk Management and Decision Processes, The Wharton School, University of Pennsylvania. Mimeo.
- Larrain, Felipe and Andres Velasco. 1999. "Exchange Rate Policy for Emerging Markets: One Size Does Not Fit All." Unpublished Manuscript.
- Levav, Itzhak. 1999. "The indivisible face of disaster" in World Bank, Investing in Prevention. A Special Report on Disaster Risk Management. Washington, D.C.
- Lipton, M and M. Ravallion. 1995. "Poverty and Policy." In *Handbook of Development Economics Vol. 3*, J. Behrman and T.N. Srinivasan, eds., Amsterdam: North Holland
- Lokshin, Michael and Martin Ravallion. 2000. "Welfare Impact of Russia's 1998 Financial Crisis and the Response of the Public Safety Net." World Bank, Washington, D.C. Mimeo.
- Londoño, Juan Luis and Miguel Székely. 1997. "Persistent Poverty and excess inequality: Latin America, 1970-1995." Inter-American Development Bank (2.4).
- Lustig, Nora (ed.). 1995. "Coping with Austerity: Poverty and Inequality in Latin America." The brooking Institution: Washington, D.C. op cit. (1.3).
- Lustig, Nora and Miguel Székely. 1998. "Economic Trends, Poverty and Inequality in Mexico." IADB-SDS POV, Washington, D.C.
- Lustig, Nora. 1997. "The Safety Nets Which Are Not Safety Nets: Social Investment Funds in Latin America." HIID and UNDP Conference on Governance, Poverty Eradication, and Social Policy, Harvard University, November.
- Lustig, Nora. 1998. "Mexico: The Remaking of an Economy. Second Edition." The Brookings Institution: Washington, D.C.
- Lustig, Nora. 1999. "Crisis and the Poor: Socially Responsible Macroeconomics." Inter-American Development Bank working paper. Washington, D.C. also Latin American and the Caribbean Economic Association Presidential Address. Santiago, Chile. October 22, 1999.

- Magalhaes and Glantz. 1992. "Socioeconomic Impacts of Climate Variations and Policy Responses in Brazil." *Fundacao Grupo Esquel Brasil* p. 25.
- Mejía and Rob Vos. 1997. "Poverty in Latin America and the Caribbean: An Inventory, 1980-95." Inter-American Development Bank.
- MIMAP. 1999. "After the Crisis: A Look at the Elementary and Secondary Enrolment in the Philippines." Volume VI Number 2, June.
- Ministerio de Economia de Argentina. Informe Economico N°28.
- MNA Live Database. Human Development Indicators: Country at a Glance.
- Moctezuma, Esteban. Information given by the Mexican Minister of Social Development Esteban Moctezuma in his keynote address at the IDB Conference on Social Protection and Poverty, February 1999.
- Morley, Samuel and Carola Alvarez. 1992. "Recession and the growth of poverty in Argentina." IADB, Washington, D.C.
- Morley, Samuel. 1994. "Poverty and Inequality in Latin America, Past Evidence and Future Prospects." Policy Essay No. 13. ODC, Washington, D.C.
- NDA (National Statistics Office) www.pdfi.org.ph/mimap/eindune.htm (32).
- Newman, John, Steen Jorgensen and Menno Pradham. 1991. "Worker's Benefits from Bolivia's Emergency Social Fund." Living Standards Measurement Study. Working Paper 77. World Bank, Washington, D.C.
- NSO (National Statistical Office in Budget of Ministry of Education and Interior). 1998. compiled by Focus on the Global South.
- Oxford Analytica. November 10, 1998.
- PAHO/WHO. 1994.
- Perry, Guillermo and Daniel Lederman. 1999. "Adjustments after Speculative Attacks in Latin America and Asia: A Tale of Two Regions?" World Bank, Washington, D.C. Mimeo.
- Pilwha, Chang. 1999. "Impact of Economic and Financial Crisis on Women in South Korea." May.
- Poppele, Jessie, Sudarno Sumarto and Lant Pritchett. 1999. "Social Impacts of the Indonesian Crisis: New Data and Policy Implications." SMERU report.
- Rapporteurs' Report, Openness Macroeconomics Crisis and Poverty: A Dialogue and Consultation on World Development Report 2000-01, May 10-12 1999, Kuala Lumpur, Malaysia.

- Ravallion, Martin and Shaohua Chen. 1997. "What can New Survey Data Tell us about Recent Changes in Distribution and Poverty?" *World Bank Economic Review* 11: 357-382.
- Reardon, Thomas and Edward Taylor. 1996. "Agroclimatic Shock, Income Inequality, and Poverty: Evidence from Burkina Faso." *World Development* 24(5) May.
- Reyes, Cecilia and Anne Bernadette E. Mandap. 1999. "The Social Impact of the Regional Financial Crisis in the Philippines." MIMAP Research Paper Series No. 41. February.
- Rios-Rull, J.V. 1994. "Population Changes and Capital Accumulation. The Aging of the Baby Boom." Unpublished Manuscript. University of Pennsylvania.
- Rodrik, Danni. 1997. "Where did all the Growth Go? External Shocks, Social Conflict and Growth Collapses." Harvard University. Mimeo.
- Rodrik, Danni. 1999. "Why is there so Much Economic Insecurity in Latin America?" Unpublished Manuscript.
- Ruprah, Inder and Luis Marcano. 1998. "Poverty alleviation in Venezuela: Who to Target and How not to adjust in a Crisis" Work in progress. Washington, D.C. Mimeo.
- Ruprah, Inder. 1999. "Towards Fiscal Prudence, Transparency and Accountability in Peru: A Proposal." Inter-American Development Bank. November. Processed.
- Rutkowski, Michal. 1999. "Russia's social protection malaise." Social Protection Discussion Paper 9909. World Bank, Washington, D.C.
- Schilderman, Theo. 1993. "Disasters and development: a case study from Peru." *Journal of International Development* 5: 415-23 July-August.
- Shah, Shekhar. 1999. "Coping with Natural Disasters: The 1998 Floods in Bangladesh." Paper for the 1999 World Bank Summer Research Workshop on Poverty and Development July 6 to 8, 1999. Washington, D.C.
- Stein, Ernesto. 1999. "Fiscal Discipline and Social Protection: Are They Compatible?" Unpublished Note. Research Department. Inter-American Development Bank: Washington, D.C.
- The Bureau of the Budget in Budget of Ministry of Education and Interior; compiled by Focus on the Global South.
- Thomas, Duncan. 1999. Economic Crisis and Poverty: Evidence from Indonesia July 1999.

Thorbecke, Erik. 1985. "The Social Accounting Matrix and Consistency-type planning Models." In G. Pyatt and J.I. Round, eds., *Social Accounting Matrices, A Basis for Planning*. World Bank, Washington D.C. (91).

Thorbecke, Erik. 1991. "Adjustment Growth and Income Distribution in Indonesia." *World Development* 19(11): 1595-1614.

Trabajador II.

UNESCO Database.

United Nations Environment Program 1993.

USAID (Office of U.S. Foreign Disaster Assistance, USAID. The OFDA database includes all natural hazards declared by the U.S. Government as disasters as well as major undeclared disasters causing a substantial number of deaths, injuries, and damage to infrastructure, agricultural production and housing. (99).

Vos, Rob, Margarita Velasco and Edgar de Labastida. 1999. "Economic and Social Effects of El Nino in Ecuador, 1997-1998." Forthcoming Publication of the IDB.

World Bank. 1991. *Jordan: Public Expenditure Review* Feb. 1991.

World Bank. 1995. "Argentina: Argentina's Poor: A Profile." Sector Report No 13318, Washington, D.C. June 27.

World Bank. 1994a. *World Development Report 1994: Infrastructure for Development*. New York: Oxford University Press.

World Bank. 1994b. Hashemite Kingdom of Jordan: Poverty Assessment. 1994. Report No 12675-JO. October 28. World Bank, Washington, D.C.

World Bank. 1998a. *Global Economic Prospects and the Developing Countries 1998/1999*. Washington, D.C.

World Bank. 1998b. Philippines Social Expenditure Priorities. Sector Report 18562. Washington, D.C.

World Bank. 1998c. "Rapid social assessments, January-April 1998 in Social Impact of the East Asian Financial Crisis." World Bank, Washington, D.C. September.

World Bank. 1998d. "Social Impact of the East Asian Financial Crisis." World Bank, Washington, D.C. September.

World Bank. 1998e. Bangladesh Emergency Flood Recovery Project. Report P7264. Washington, D.C.

World Bank. 1998f. BAPPENAS in Indonesia: Education in Indonesia, from Crisis to Recovery, December 1998, World Bank EAP Region.

World Bank. 1999a. "Global Economic Prospects and the Developing Countries 2000." Washington, D.C.

World Bank. 1999b. "Thailand Social Monitor: Coping with the Crisis in Education and Health." Second Issue.

World Bank www.worldbank.org/poverty/eacrisis/countries/indon/health1.htm

World Bank www.worldbank.org/poverty/eacrisis/countries/indon/pov1.htm

World Bank Economic Review 1991. 5(2/May).

Yaqub, Shahin. 1999. "How Equitable is Public Spending in Health and Education?" Background paper for *World Development Report 2000/1*. World Bank, Washington, D.C.