

## **Chapter 5 Protecting the Poor**

5.1 Poverty is more than inadequate consumption, education, and health. The voices of the poor make abundantly clear that it is also fear for the future—knowing that crises may happen, but not knowing whether one will be able to cope. As a woman in Egypt said, “We face a calamity when my husband gets ill. Our life comes to halt until he recovers and goes back to work.”

5.2 As traditionally defined and measured, poverty is a static concept. But vulnerability and insecurity are dynamic. Insecurity is exposure to risk; vulnerability is the resulting possibility to suffer a decline in well-being.<sup>1</sup> The event triggering the decline is often referred to as a “shock.” Shocks can affect individuals (illness, death), a community, region, or even a nation (natural disasters, macroeconomic crises). Living with high risk is part of life for the poor, and changes in trade, technology, and climate may well be increasing the riskiness of everyday life.

5.3 The poor have developed elaborate mechanisms for coping with risk. But these mechanisms are far from being able to eliminate vulnerability. Many of the mechanisms offer short-term protection at long-term cost, which prevents escape from poverty. The policy response to vulnerability must be aimed at helping the poor manage risk by preventing and mitigating risk and lessening the impact of shocks. Such policies address the immediate problems of shocks and the inability to cope with them, but they also lay the foundations for investment by the poor that can take them out of poverty.

### **The nature and magnitude of vulnerability**

5.4 Vulnerability affects everyone. Well-paid civil servants may be vulnerable to layoffs and to becoming poor. People who live slightly above the poverty line are at risk of slipping below it. For the poor, however, vulnerability is a major concern because downward fluctuations in income can push them below destitution levels.

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<sup>1</sup> Risk, risk exposure and vulnerability are related but not synonymous terms. Risk refers to uncertain events which can damage well-being, for example, the risk to become ill, the risk that a drought will occur. The uncertainty can pertain to the timing and/or the magnitude of the event. For example, the seasonal fluctuation of farm income is an event known in advance, but the severity is not necessarily predictable. Risk exposure measures the probability that a certain risk will occur. Vulnerability measures the resilience against a shock, i.e. the likelihood that a decline in well-being will take place as a result of a shock. As this chapter explores, vulnerability is primarily a function of the household's asset endowment and insurance mechanisms. Vulnerability is also determined by the severity of the shock.

5.5 High fluctuations in income are common for the poor.<sup>2</sup> The coefficients of variation of income from the main crops in three Indian villages, for example, were between 0.37 and 1.01.<sup>3</sup> The coefficient of variation was even higher for total farm profits in six Indian villages, at 1.27.<sup>4</sup> Over a 20-year period, 78 percent of households in rural Ethiopia suffered a harvest failure.<sup>5</sup> Furthermore, because the poor have fewer assets and their sources of income are less diversified, the poor tend to suffer more than other groups from fluctuations. A study of villages in south India showed that an increase in risk (a one standard deviation increase in the coefficient of variation of the date of the onset of the monsoon) reduced farm profits of the poorest quarter of households by 35 percent, but left the wealthiest farmers virtually unaffected.<sup>6</sup> For the poorest 10 percent of households in China, 40 percent of an income shock is passed on as lower consumption; for the richest third of households, only 10 percent is because richer households have better access to mechanisms of insurance.<sup>7</sup>

5.6 One measure of vulnerability of the poor and near poor is how often a household is above or below the poverty line over a given time period. A nine-year panel survey of households in south Indian villages found that only one-fifth of households were poor in each of the nine years and that only 12 percent were never poor. Movement into and out of poverty was the norm for the vast majority of households.<sup>8</sup> Indeed, most studies find that the “sometimes poor” group is significantly larger than the “always poor” group (table 1.4). The movements can be quite large. In South Africa, 29 percent of households in the poorest quintile moved up by two or more quintiles from 1993 to 1998, while in Peru 37 percent of households did so from 1985 to 1990.<sup>9</sup>

5.7 Another approach is to define long-term poverty as average long-term consumption below the poverty line and then to ask how much of actual measured poverty is “transitory.” This approach implicitly takes into account the duration and depth of transitions into and out of poverty. With this method, about 50 percent of poverty was estimated as transitory in south India<sup>10</sup> and about 50 percent of the mean squared error poverty gap—a measure of the severity of poverty—was found to be transitory in China.<sup>11</sup> Transitory poverty is still poverty, however, and there may well be long-term adverse consequences of a short-term fall into poverty that are not captured by the data.

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<sup>2</sup> Some downward income fluctuations are predictable. For example, in many agrarian settings, the pre-harvest season is a period of food shortage. While this is strictly speaking not a risk (although the magnitude of the shortfall may be uncertain), households will still try to smooth consumption over this period, and this carries costs. They may need to build and fill a grain store, borrow, or call upon a social network for support. These requirements may be harder to meet for the poor (Sinha and Lipton 1999). The poorest that lack networks may be forced to “pre-sell” their crops to wealthier farmers or middlemen at lower than would-be market prices (Search 1999). Our discussion of risk management will include the management of predictable fluctuations because many of the tools available to deal with risk also help households smooth predictable fluctuations.

<sup>3</sup> Townsend 1994.

<sup>4</sup> Rosenzweig and Binswanger 1993.

<sup>5</sup> Dercon 1999; Kinsey, Burger and Gunning 1998.

<sup>6</sup> Rosenzweig and Binswanger 1993.

<sup>7</sup> Jalan and Ravallion 1997.

<sup>8</sup> Gaiha and Deolalikar 1993.

<sup>9</sup> Maluccio, Haddad and May 1999; Glewwe and Hall 1998.

<sup>10</sup> Ravallion 1988.

<sup>11</sup> Jalan and Ravallion 1997.

5.8 Variations in consumption and income can occur for a variety of reasons. Vulnerability is multidimensional, and poor households face manifold risks. Rural households in Ethiopia, for example, face natural shocks, such as harvest failure; health-related shocks, such as illness or disability; and macro-level shocks, including the effects of taxation, land expropriation, and war (table 5.1). Some of the shocks are individual; others are at the community level. Some are economic; others are political.

**Table 5.1 Shocks faced by rural households in Ethiopia**

<i>Event</i>	<i>Percentage of households reporting hardship episode in last 20 years</i>
Harvest failure (drought, flooding)	78
Policy shock (taxation, forced labor)	42
Labor problems (illness, death)	40
Oxen problems (illness, death)	39
Other livestock problems (illness, death)	35
Land problems (land expropriation, reform)	17
Asset losses	16
War	7
Crime (theft, violence)	3

Source: Dercon 1999.

5.9 One way to understand risks better and design appropriate policy responses is to develop a typology of risks and shocks to which people are vulnerable (table 5.2). Risks can be classified by the level at which they occur (micro, meso, and macro) and by the nature of the event (natural, economic, and so on).

5.10 Micro level shocks, often referred to as idiosyncratic, affect individuals or households. Meso level shocks strike groups of households or an entire community or village. These shocks are common (or covariant) to all households in the group. Shocks can also occur at the national or international level. This distinction by level of risk is critical. A risk that affects an entire village, for example, cannot be insured solely within the village, but requires pooling with areas not subject to the risk. In practice, many shocks have both idiosyncratic and covariant parts, although most empirical studies find that the idiosyncratic part of income risk is large.<sup>12</sup> A study of 15 Ethiopian communities found 23 percent of rainfall-induced income shocks to be idiosyncratic and that crop damage from other sources (pests, animal damage, weeds) had even larger idiosyncratic components (from 65-87 percent). Income shocks from illnesses had the largest idiosyncratic component.<sup>13</sup>

5.11 Knowing the source of shocks is important for preventing them, but identifying the source is not always straightforward. Many exogenous events can have similar effects on household income. A macroeconomic shock, a hurricane, or a civil war can all lead to severe decline in income and depletion of a household's asset base. But how a given shock is transmitted to households is greatly affected by a country's institutions. Not every drought causes famine, illness, and death. The effect of such disasters depends on how well the government functions, whether there is peace or civil strife, and so on. The same

<sup>12</sup> Deaton 1997; Townsend 1995; Udry 1991.

<sup>13</sup> Dercon and Krishnan 1999.



unable to absorb subsequent shocks.<sup>14</sup> Also, where illness follows a natural disaster, the latter may have wiped out the poor's food supply, leaving them weak and susceptible to illness. Severity can range from catastrophic (natural disasters, death of the breadwinner) to minor (a slight illness, a few days without work for casual laborers).

5.13 A final refinement is whether a potential shock affects all or just part of a household's income sources or assets. A partial risk such as illness may affect only labor income but not the harvest, while a total risk such as a natural disaster usually affects a household's entire portfolio. Partial risks can be mitigated if their covariance is lessened.<sup>15</sup>

### **The poor's exposure to risk**

5.14 Most shocks have both household-specific and common components. This chapter focuses on risks with large idiosyncratic components: illness and injury, violence, old age risk, harvest risk, labor market risk, and food price risk.<sup>16</sup> Common risks are discussed in chapter 4 (war and civil strife) and chapter 6 (natural disasters and macroeconomic shocks).

#### *Health risks*

5.15 Illness, injury, and death strike rich and poor—but not alike. While some conditions are “equal-opportunity diseases,” most hit the poor harder.<sup>17</sup> Poor health and poverty constitute a vicious circle: the poor live and work in environments that expose them to greater risk of illness or injury, and they have less access to health care. The poor's lower nutritional intake also makes them less productive and less able to participate in the labor market, worsening their poverty.<sup>18</sup> The health risks to the poor are strongly connected to food availability, which is affected by almost all the risks faced by the poor: natural disasters, wars, harvest risk, and food price risk. Since the poor spend a larger proportion of their income on food, even small food price increases can have major consequences for food intake. Living conditions of poor households also aggravate the health risks for children. In urban slums, children face higher risks of diarrhea (from water contamination), measles (from cramped housing conditions), and accident and injury (from unsafe conditions). However, it is in rural areas, where most of the developing world's poor live, that health risks are highest. Access to health care is almost always worse in rural areas than urban areas, reflecting the strong urban bias of public health expenditures in many countries.<sup>19</sup>

5.16 Illness or injury in the household has both direct costs (spending on prevention, care, and cure) and opportunity costs (lost income or schooling while ill). The opportunity cost often exceeds the direct cost, especially when the main earner is stricken.

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<sup>14</sup> The recurring nature of shocks is also referred to as the degree of autocorrelation. Deaton 1991 develops a theoretical model showing the effect of repeated shocks on buffer stock behavior.

<sup>15</sup> Sinha and Lipton 1999.

<sup>16</sup> The extent to which these risks are predominantly idiosyncratic depends upon what the underlying causes are. For example, the risk to become ill can be entirely idiosyncratic or have large common components if one lives in the area of an epidemic. Likewise, job loss can be an individual risk or be common to most workers in a country if it is the result of a macroeconomic crisis.

<sup>17</sup> Sinha and Lipton 1999.

<sup>18</sup> Prasad, Belli and Das Gupta 1999.

<sup>19</sup> Sinha and Lipton 1999.

Households with very young children usually have only one adult earner and are especially at risk.<sup>20</sup> The timing, duration, and frequency of an illness also affects its impact. A study of south India found that households can compensate for an illness during the slack agricultural season, but an illness during the peak season leads to a heavy loss of wage income, especially on small farms, usually necessitating costly informal borrowing.<sup>21</sup> A study of Indonesia found that households can protect against 70 percent of consumption fluctuations caused by minor health shocks but only against 30 percent of fluctuations due to health shocks with serious long-term effects.<sup>22</sup>

5.17 Unlike most illnesses, which are idiosyncratic shocks to the household, epidemics affect an entire region or country. During an epidemic, multiple shocks frequently occur together. Thus a natural disaster such as a drought can destroy a harvest, leading to widespread famine. Epidemics frequently follow, as a result of the concentration of people in areas without adequate drinking water and sanitation, and often kill more people than the famine.<sup>23</sup> Because epidemics are beyond the ability of households or communities to insure against and cope with, the government must be prepared to provide emergency health care and to bring in food from other areas.

5.18 Few epidemics in the 20<sup>th</sup> century have had more devastating impact than the AIDS pandemic. More than 33 million people worldwide are infected with HIV and more than 13 million people have died of AIDS.<sup>24</sup> More than 90 percent of people infected with HIV/AIDS are in the developing world. Both low income and unequal distribution of income are strongly associated with HIV infection rates (box 5.1). Sub-Saharan Africa has more cases of existing and new infections than the rest of the world combined, although the rate of increase is now steepest in Asia and in the countries of the former Soviet Union.<sup>25</sup>

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#### **Box 5.1 AIDS and poverty**

All 20 countries with the highest HIV prevalence are in Sub-Saharan Africa. In many of these countries the incidence of poverty and income inequality are high. Countries with high levels of gender inequality also have higher infection rates than other countries.

In Botswana and Zimbabwe, 1 in 4 adults is infected with HIV. In 10 other African countries, more than 1 in 10 adults is infected. The effect on life expectancy will be devastating. Had AIDS not affected these countries, life expectancy would have reached 64 years by 2010-15. Instead, it will have regressed to 47 years, reversing the gains of the last 30 years. The impact on child mortality is also enormous. In Zambia or Zimbabwe, 25 percent more infants are already dying than would be the case without HIV.

While the link between poverty and AIDS is strong at the country level, it is less clear at the individual level. Early on, the disease struck mainly the better-off groups. Evidence for the 1980s and first half of the 1990s indicates a positive correlation between HIV infection and education, income, and socioeconomic status, probably because wealthier and better-educated people were more likely to have multiple sexual partners. Nonsexual modes of transmission—intravenous drug use and mother-to-child transmission—are associated more with poverty. In recent years, the profile of HIV-infected people has been changing rapidly, and AIDS is becoming a disease of the poor. As the more educated responded to the information that became available

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<sup>20</sup> Sinha and Lipton 1999.

<sup>21</sup> Kochar 1995.

<sup>22</sup> Gertler and Gruber 1997.

<sup>23</sup> de Waal 1991.

<sup>24</sup> World Bank 1999b.

<sup>25</sup> World Bank 1997.

about AIDS, adopting protective sexual practices (condom use), evidence indicates that the share of new infections among low-income and low-educated people is rising.

With 5 million people becoming infected annually, urgent action is needed to stop the spread of HIV/AIDS. A successful intervention program will require strong government commitment and partnerships with the private sector, NGOs, and community leaders. Interventions shown to be effective include:

- Launching campaigns to change individual behavior and social norms regarding sexual contact
- Making condoms available and affordable
- Providing voluntary counseling, testing, and treatment of sexually transmitted diseases
- Ensuring a safe blood supply
- Reducing mother-to-child transmission.

Support is also needed for the victims of AIDS. Studies indicate that the impact of an adult death from AIDS is more severe in poor households. The recommended policy approach is to focus on poor households that are most in need of survivor assistance following death. This assistance is most crucial in the period immediately after a death, when food consumption has fallen but has not yet had a permanently damaging impact.

This approach is embodied in the World Bank's recent partnership with African governments and the Joint United Nations Program on HIV/AIDS (UNAIDS), which views HIV/AIDS as a central development issue and focuses on increased resources and technical support, targeted prevention and treatment efforts, and an expanded knowledge base to assist developing countries.

Source: Ainsworth and Semali 1998; Basu 1995; Over 1998; UNAIDS 1998; World Bank 1997; World Bank 1999b.

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### *Crime and domestic violence*

5.19 The risk of violence—from wars, civil strife, crime, and domestic disputes—occurs at international, national, community, and household levels. The national and international dimensions were discussed in chapter 4. At the level of the household and community, crime and domestic violence have been shown to reduce earnings and the accumulation of human and social capital.

5.20 Crime affects poor areas of cities more than better-off areas. While the rich can hire private security guards and fortify their houses, the poor have few means to protect themselves against crime. In Sao Paulo in 1992, the murder rate for adolescent males was 11 times higher in poor neighborhoods than in wealthier ones.<sup>26</sup>

5.21 Crime also hurts the poor indirectly. Children exposed to violence may perform worse in school.<sup>27</sup> A study of urban communities in Ecuador, Hungary, the Philippines, and Zambia showed that difficult economic conditions lead to destruction of social capital, as involvement in community organizations declines, informal ties among residents weaken, and gang violence, vandalism, and crime increase.<sup>28</sup> Violence and crime may thus deprive the poor of two of their best means of reducing vulnerability: human and social capital.

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<sup>26</sup> Sinha and Lipton 1999.

<sup>27</sup> Morrison and Orlando 1999.

<sup>28</sup> Moser 1998.

5.22 Rich and poor women alike are victims of domestic violence, but the incidence is often higher in poor households. In Santiago, for example, 46 percent of poor women and 29 percent of wealthy women suffered from domestic violence; in Managua the rates were 54 percent and 45 percent.<sup>29</sup> Another study found that poverty increased the probability of sexual and psychological violence, but not physical violence.<sup>30</sup> Causality may work in both directions. The stress associated with poverty may cause violence, and victims of violence may be less productive than other workers or unable to work as often, reducing their earnings and labor market opportunities.<sup>31</sup>

*Old-age risk*

5.23 The risks associated with aging are many: illness, inability to continue working, uncertainty as to whether transfers will provide for an adequate living standard, and social isolation. The incidence of poverty among the elderly varies significantly. In most Latin American countries, the proportion of elderly people living in poverty is generally lower than in the population at large. In Eastern Europe and the countries of the former Soviet Union, the reverse is true: the incidence of poverty among the elderly is usually above average and is particularly severe among people 75 and older (table 5.3). Because of the longer life expectancy of women, women constitute the majority of the elderly population. Very few elderly people are covered by formal pension systems or have adequate savings to live on. Most rely on transfers from younger family members or continue to work. In Latin American countries, 16-48 percent of people 65 and older remain economically active.<sup>32</sup> The rapid demographic transition occurring in the developing world means that the number of elderly people will increase significantly in coming decades. Planning for their care has to start now.<sup>33</sup>

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<sup>29</sup> Morrison and Orlando 1999.

<sup>30</sup> Gonzales de Olarte and Gavilano Llosa 1999.

<sup>31</sup> Morrison and Orlando 1999.

<sup>32</sup> IADB 1999.

<sup>33</sup> Flanagan 1999.

**Table 5.3 Old age and poverty in selected countries in Latin America and Eastern Europe and the former Soviet Union (Percent)**

<i>Latin America</i>		<i>Eastern Europe and former Soviet Union</i>			
	<i>Percentage of people 65 and older in bottom income quintile</i>		<i>Poverty incidence among elderly</i>		<i>National poverty incidence</i>
			<i>65-74</i>	<i>75+</i>	
Brazil	7.9	Bulgaria	35.0	47.5	26.1
Chile	6.2	Hungary	23.6	37.7	20.6
Colombia	20.0	Poland	18.3	22.1	23.0
Costa Rica	26.5	Estonia	37.0	47.9	30.5
Dominican Republic	18.4	Kyrgyz Republic	47.6	41.4	42.5
Ecuador	26.8	Russia	45.0	45.9	39.4
El Salvador	15.9				
Honduras	22.8				
Jamaica	17.4				
Mexico	20.3				
Nicaragua	16.8				
Panama	17.9				
Peru	14.6				
Venezuela	19.2				

Source: IADB 1999; Grootaert and Braithwaite 1998.

5.24 Consultations with the poor have indicated that economic security is a prime concern of the elderly poor. Access to health services, suitable housing, and quality of family and community life also make important contributions to the well-being of the elderly. Isolation, loneliness, and fear all too often mark old people's lives.<sup>34</sup>

#### *Harvest risk*

5.25 Weather-related uncertainties (mainly rainfall), plant disease, and pests create harvest risk for all farmers, but not all farmers have the same access to the agricultural technology (irrigation, pesticides, disease-resistant varieties) to deal with such risks. Typically, these technologies are less available to the poor. In 1994-96, less than 20 percent of all cropland in low and middle income countries was irrigated, and in Sub-Saharan Africa the proportion was only 4 percent. Likewise, fertilizer use in Sub-Saharan Africa was only 9 kilograms per hectare, about 10 percent of the application rate in the developing world at large.<sup>35</sup>

5.26 The effect of harvest fluctuations on household consumption depends on the size, frequency, and bunching of the fluctuations; the initial level of consumption; the share of farm output in total household income; and the extent of covariance between farm output and prices. Household responses typically are a mix of consumption reduction, sale of assets

<sup>34</sup> Narayan et al 1999.

<sup>35</sup> Barrett 1999.

or taking up credit, and seeking out nonagricultural income sources. The specific sequencing and prioritization of strategies to reduce harvest risk depend on ecological and social options and other country-specific factors. For example, successive harvest failures because of insufficient monsoons in Sri Lanka in 1995 and 1996 led to increased indebtedness in 80 percent of households in eight villages. The limited success of household coping strategies was reflected in the fact that 30 percent of households reported increased incidence of illness.<sup>36</sup>

5.27 The evidence is mixed on whether drought affects crop yields of the poor and rich differently. But the rich are better able to diversify into high-risk and high-return crops and into nonfarm sources of income. Also clear is that harvest risk presents a classic poverty trap for the poor. The way out would be to grow higher yielding varieties and use more fertilizer and other purchased inputs. However, this also implies more downside risk, which the poor cannot take on since they lack the resources to absorb a potential shock. This forces asset-poor households to handle harvest risk by raising low-risk, low-return crops, thus making it hard for them to escape poverty. Poor Indian farmers devote a larger share of land to traditional varieties of rice and castor than to high-return varieties.<sup>37</sup> Tanzanian farmers without livestock grow more sweet potatoes (a low-risk, low-return crop) than do farmers who own livestock. As a result, the returns to farming are 25 percent higher per adult household member for the wealthiest group than for the poorest.<sup>38</sup> The rich are also better able to diversify into nonfarm activities. In the Sahel, wealthier households make riskier decisions and have more diversified portfolios.<sup>39</sup> Landholdings are positively associated with investments in nonfarm activities in Burkina Faso and nonfarm income correlates negatively with farm income.<sup>40</sup>

5.28 The poor are at a further disadvantage because harvest shocks are typically covariate over a fairly large area. This limits the usefulness of group-based strategies and networks of mutual support, because all or most group members are likely to be affected simultaneously. The covariate nature of harvest shock argues for national—or even international—intervention.<sup>41</sup>

### *Labor market risk*

5.29 Labor market risk among the poor is associated mainly with working in the informal sector or as a casual laborer. Poverty among such workers is usually above average. Workers face two kinds of labor market risks: shocks that create an undesirable change in labor market status and shocks that hurt workers once they are in the new status.<sup>42</sup> When employment in the public sector contracts, for example, workers are pushed into unemployment or into informal sector work. The first workers to be laid-off are usually those with low skills, many of whom join the ranks of the urban poor. This pattern was

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<sup>36</sup> Sinha and Lipton 1999.

<sup>37</sup> Morduch 1990.

<sup>38</sup> Dercon and Krishnan 1996.

<sup>39</sup> Sakurai 1997.

<sup>40</sup> Reardon and others 1992.

<sup>41</sup> Sinha and Lipton 1999.

<sup>42</sup> Sinha and Lipton 1999.

observed in many countries in Latin America and Africa during the structural adjustment reforms of the 1980s and early 1990s.<sup>43</sup>

5.30 The Asian crisis had pronounced effects on labor markets. All affected countries saw declines in real wages, especially in Indonesia where urban nonagricultural wages fell 42 percent between 1997 and 1998. Nonagricultural employment also fell in all countries, but in modest amounts (2-6 percent) considering the magnitude of the drop in GDP. Although the urban formal sector was hit first, there were spillover effects to the informal sector and rural areas. In Indonesia, laid-off workers crowded the urban informal sector and incomes fell. In Thailand, the crisis reduced the regular flow of unskilled workers from rural areas to Bangkok, and caused some return migration as well, adding significantly to poverty in areas such as the Northeast.<sup>44</sup>

5.31 The privatization of state enterprises in Eastern Europe and the countries of the former Soviet Union led to increased poverty among displaced workers with low and often obsolete skills, who were not qualified to work in emerging industries. A study of six transition economies found a high incidence of poverty in 1993-95 among workers with less than secondary education, ranging from 33 percent in Poland to 46 percent in Russia. In Russia, falling real wages and wage arrears increased poverty among workers in the formal sector, about a third of whom were poor in 1995.<sup>45</sup>

5.32 Labor market risk also affects rural households. Many rural households have family members who work in urban areas as seasonal or permanent migrants. Declining demand for labor in urban areas thus also affects rural households. Most rural laborers are low-skilled and are likely to be among the most severely affected by aggregate fluctuations in demand for labor.<sup>46</sup>

5.33 Fluctuations in demand for labor often disproportionately affect women and young workers. Women are more likely than men to work for small firms which tend to be more sensitive to demand fluctuations, as the recent crisis in the Republic of Korea demonstrated. Women, typically viewed as temporary or secondary workers, tend to be laid off first in times of falling demand.<sup>47</sup> Lack of work experience makes young workers especially vulnerable to demand fluctuations. Unemployment rates among 15- to 19-year-old workers reached 30.5 percent in Greater Buenos Aires in 1994—much higher than the 8-9 percent rate for workers 35 and older.<sup>48</sup>

5.34 Faced with falling income, poor households try to increase the labor market participation of household members, especially women and children. This response, documented in many countries, was strong in Indonesia following the recent crisis.<sup>49</sup> Households headed by women or with mainly very young members can rely less on this response because they have fewer household members who can increase their participation in

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<sup>43</sup> CEPAL 1991 as cited in Sinha and Lipton 1999.

<sup>44</sup> World Bank 1999a.

<sup>45</sup> Grootaert and Braithwaite 1998.

<sup>46</sup> Sinha and Lipton 1999.

<sup>47</sup> Horton and Mazumdar 1999.

<sup>48</sup> Marshall 1998.

<sup>49</sup> Horton and Mazumdar 1999.

the labor market. In India, where women and children account for 73 percent of the population below the poverty line, women routinely enter the informal labor market to cope with shocks. Their low education levels confine them to low-paying, irregular work that is often an extension of domestic work. This puts women in a worsening cycle of poverty and vulnerability.<sup>50</sup> Children are often pulled out of school to work, thus contributing to the cross-generational cycle of poverty. This was observed in several Latin American countries in the early 1990s and in Indonesia in the late 1990s.<sup>51</sup>

### *Food price risks*

5.35 Rural residents in infrastructure-poor economies, net food buyers (urban residents, landless poor), and small farmers who switch seasonally between net food buying and selling are the most vulnerable to food price risk. Households that rely on subsistence agriculture to meet their food needs are less vulnerable than households that do not grow their own food. The more land a household owns, the more likely the household is to be a net food seller, and so to benefit from an increase in food prices.

5.36 Liberalization of markets often leads to an increase in the price of staples. Most of the urban poor, who are net food buyers, will be hurt. However, urban residents with strong ties to rural farmers who are net food sellers may suffer less or may even gain from price increases.<sup>52</sup> Small farmers are also likely to be hurt by food price increases because many of them are net buyers over the year, as they switch from net-selling after the harvest to net-buying the rest of the year. This seasonal switching means that farmers sell food when it is plentiful and cheap and buy it when it is in short supply and expensive. Where transportation facilities are good, traders can step in and equalize prices over the year through arbitrage, but the required infrastructure is lacking in many areas. In Madagascar, the mean price of rice, the main staple, rose 42 percent and the variance increased 52 percent after the price liberalization of the 1980s. Two-thirds of rice farmers were hurt because they consumed more rice than they produced, and poverty deepened.<sup>53</sup>

5.37 The poor use the same mechanisms to deal with food price shocks as they use to deal with harvest risk (crop and income diversification). The two types of risk are of course often covariant (harvest failure is a prime reason for the rise in the price of staples). Income diversification into nonfarm activities holds the greatest promise for coping with food price shocks preemptively. Reducing consumption as rising food prices squeeze the poor's overall purchasing power, a post-shock coping response, can have major and lasting health effects, especially on children.

## **Responses to risk by households and communities**

5.38 The poor are very much aware of the risks to which they are exposed. Dealing successfully with these risks is often a matter of life or death. The discussion of specific risks in the preceding section touched on several ways in which poor households and communities respond to risks. This section looks more systematically at these responses and

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<sup>50</sup> Amis 1994.

<sup>51</sup> de la Rocha 1995; Horton and Mazumdar 1999.

<sup>52</sup> Sinha and Lipton 1999.

<sup>53</sup> Barrett 1998; Barrett 1996.

assesses evidence on the effectiveness of different strategies. The following section examines policy responses.

5.39 Households use both informal and formal strategies to manage risk (table 5.4). Informal strategies include arrangements that involve solely households or individuals, or groups such as communities or villages. Formal arrangements, examined in the next section, include market-based activities such as banking and publicly provided mechanisms such as pension systems or workfare schemes.

5.40 These strategies can be further classified as risk reduction and mitigation measures, which consist of actions taken in anticipation of a shock, and coping measures, which consist of actions taken in response to a shock.<sup>54</sup> Risk reduction aims at reducing the probability of a shock or negative fluctuation. Individuals or households are seldom in a position to take such action. A major exception is health risk where preventive steps (vaccination, balanced diet) are up to the individual. To reduce most risks, action is needed at the meso or macro level. The risk of flooding can be reduced if the community builds a dike or if the government builds a dam (such infrastructure investments are discussed further in chapter 7). Sound economic and environmental policies, education and training, and other measures can also reduce a wide variety of risks (and are discussed elsewhere in the report).

5.41 Risk mitigation aims at decreasing the impact of a downward fluctuation. Households mitigate risk through portfolio diversification and insurance. Diversifying a portfolio—by acquiring assets whose returns are not perfectly correlated—reduces the variability of total income. Common strategies are diversifying crops and plots, combining farm and nonfarm income in rural areas, and combining wage income and income from household enterprises in urban areas. Households can take most of these actions on their own, although in some cases group action or government action (agricultural extension, infrastructure) can facilitate diversification. Households also mitigate risk through insurance, which can take three forms: self-insurance, informal insurance, and formal insurance. Market-based formal insurance plays a minor role in risk mitigation for the poor.

5.42 Risk coping strategies aim to relieve the impact of a shock after it occurs. Actions by individuals include dissaving, borrowing, and drawing on support networks. Actions by the governments include activating the transfers or workfare mechanisms envisaged under the social safety net. If these measures prove insufficient, households may need to reduce consumption or increase labor supply. As shown below, many of these coping responses force households to pay a high long-term cost to obtain a short-term benefit. They thus constitute a strong argument why the emphasis on risk management should be on ex-ante strategies.

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<sup>54</sup> The three-tiered framework of risk reduction, mitigation and coping is developed in Holzmann and Jorgensen 1999. In the literature on risk, a different classification is sometimes used, whereby only ex-ante strategies are labeled “risk management,” and ex-post strategies are called “risk coping.” Risk management is seen as all efforts at reducing income variability (diversification, migration). Risk coping consists of consumption smoothing, either intertemporally (borrowing, self-insurance, saving) or across households (risk sharing, i.e. formal or informal insurance). See Alderman and Paxson 1992.

5.43 This chapter’s primary focus is on public action to improve risk mitigation and risk coping by the poor. As a prelude to that discussion, we now consider in detail households’ and communities’ own responses to risk via informal mechanisms—in other words, the strategies and arrangements shown in the highlighted block of table 5.4.

**Table 5.4 Mechanisms for managing risk**

	<i>Informal mechanisms</i>		<i>Formal mechanisms</i>	
	<b>Individual and household</b>	<b>Group-based</b>	<b>Market-based</b>	<b>Publicly provided</b>
<b>Risk reduction</b>	<ul style="list-style-type: none"> <li>• Preventive health practices</li> <li>• Migration</li> <li>• Less risky income sources</li> </ul>	<ul style="list-style-type: none"> <li>• Collective action for infrastructure, dikes, terraces</li> <li>• Common property resource management</li> </ul>		<ul style="list-style-type: none"> <li>• Sound macroeconomic policy</li> <li>• Environmental policy</li> <li>• Education and training policy</li> <li>• Public health policy</li> <li>• Infrastructure (dams, roads)</li> <li>• Labor market policies</li> </ul>
<b>Risk mitigation</b> <ul style="list-style-type: none"> <li>• <b>Portfolio diversification</b></li> <li>• <b>Insurance</b></li> </ul>	<ul style="list-style-type: none"> <li>• Crop and plot diversification</li> <li>• Income source diversification</li> <li>• Investment in physical and human capital</li> <li>• Marriage and extended family</li> <li>• Sharecrop tenancy</li> <li>• Buffer stocks</li> </ul>	<ul style="list-style-type: none"> <li>• Occupational associations</li> <li>• Rotating savings and credit associations</li> <li>• Investment in social capital (networks, associations, rituals, reciprocal gift giving)</li> </ul>	<ul style="list-style-type: none"> <li>• Savings accounts in financial institutions</li> <li>• Microfinance</li> <li>• Old age annuities</li> <li>• Accident and disability insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural extension</li> <li>• Open up trade opportunities</li> <li>• Protection of property rights</li> <li>• Pension systems</li> <li>• Unemployment insurance</li> <li>• Health and disability insurance</li> </ul>
<b>Risk coping</b>	<ul style="list-style-type: none"> <li>• Sale of assets</li> <li>• Loans from moneylenders</li> <li>• Child labor</li> <li>• Reduced food consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Transfers from networks of mutual support</li> </ul>	<ul style="list-style-type: none"> <li>• Sale of financial assets</li> <li>• Loans from financial institutions</li> </ul>	<ul style="list-style-type: none"> <li>• Social assistance</li> <li>• Workfare</li> <li>• Subsidies</li> <li>• Social funds</li> <li>• Cash transfers</li> </ul>

Source: Adapted from Holzmann and Jorgensen 1999.

### *Mitigating risk through diversification*

5.44 Many studies have documented that households throughout the developing world diversify their income sources to smooth the flow of total income over time. A review of 25 case studies in Africa found that rural households received an average of 45 percent of income from nonfarm activities, with the share ranging from 15-93 percent (table 5.5).<sup>55</sup> Farmers also diversify across crops and plots and by doing wage work for other farmers.

5.45 However, evidence suggests that the net effect of these efforts is limited: variability of farmers' income remains high, largely because all the income options typically open to farmers tend to move together during crises. Drought, for example, reduces nonfarm income as well as harvest income because crop failure leads to a generalized drop in income that reduces demand for nonfarm services.<sup>56</sup> The range of income options available to farming households is often quite restricted. Evidence from Burkina Faso, Ethiopia, India, Kenya, and Tanzania indicates that entry constraints—including lack of working capital, skills, and inputs—exist for many activities that could allow farmers to diversify their incomes. The startup cost of setting up a shop or providing services is often 10-20 times the cost of performing other activities that the poor typically undertake, such as charcoal making, dung cake collection, or simple food processing.<sup>57</sup> Unfortunately, such activities provide only weak income diversification. As a result, poor farmers tend to be less effectively diversified than rich farmers (see table 5.5).<sup>58</sup>

5.46 Faced with limited possibilities for effective diversification, poor farmers specialize in low-risk, low-return activities. This creates a doubly hazardous situation for the poor: although the poor face more severe consequences from downward fluctuations, they end up less diversified and less able to achieve income smoothing.<sup>59</sup>

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<sup>55</sup> Reardon 1997.

<sup>56</sup> Fafchamps and others 1998.

<sup>57</sup> Dercon 1999.

<sup>58</sup> Reardon 1997; Dercon and Krishnan 1996.

<sup>59</sup> Income diversification is not always meant to deal with risk, but also to increase income. Examples are intercropping and seasonally differentiated labor supply. Such activities will increase mean income and in some cases may reduce risk as well. Of course, the extent to which increasing labor supply across seasons will add to income is also determined partly by entry constraints (Dercon 1999).

**Table 5.5 Income diversification among African farmers**

<i>Country</i>	<i>Time period</i>	<i>Average share of nonfarm income in total income (percent)</i>	<i>Rich/poor ratio of nonfarm share</i>
Botswana	1985-86	77	2.5
Burkina Faso	1981-84	37	2.5
Ethiopia	1989-90	36	1.2
Gambia	1985-86	23	1.3
Malawi	1990-91	34	1.0
Mozambique	1991	15	2.5
Niger	1989-90	52	2.0
Rwanda	1990	30	5.0
Senegal (north)	1988-89	60	2.0
Senegal (central)	1988-90	24	1.0
Senegal (south)	1988-90	41	2.6
Sudan	1988	38	1.0
Zimbabwe	1988-89	35	1.0

Source: Reardon 1997.

### *Mitigating risk through insurance*

5.47 In principle, any shock whose probability can be calculated from historical records is insurable. In practice, there are almost no insurance markets in developing countries, due to problems of contract enforcement, moral hazard, adverse selection, and asymmetric information. In developed countries, strong legal and other institutions have made it possible to overcome these problems enough to establish formal (private and public) insurance systems. In developing countries, people, especially poor people, have to rely largely on self-insurance and informal insurance.

5.48 *Self-insurance.* Households insure themselves by accumulating assets in good times and drawing on them in bad times. Theoretically, the strategy is effective if assets are safe and have a positive rate of return, especially if the rate of return exceeds the rate of time preference. In practice, returns to assets may be negative and many poor households have very high rates of time preference (they are “impatient,” often out of necessity), which limits the extent to which they accumulate assets.<sup>60</sup>

5.49 Another problem is that asset values and income are often covariant following an aggregate shock, so that the value of assets is lowest just when they are needed most. A drought that destroys a harvest, for example, may also weaken and kill cattle, which farmers use as a buffer stock in many poor countries. The terms of trade of assets relative to consumption may also deteriorate as a result of the shock, as everyone tries to sell assets at the same time. Thus both supply and demand factors contribute to the fall in asset prices: the income shock induces everyone to sell assets and the decline in purchasing power reduces demand (unless buyers from outside the shock zone show up). This argument also works in

<sup>60</sup> The theoretical model of precautionary savings and asset building is discussed in Deaton 1991 and Dercon 1999.

reverse: in good times, everyone will want to buy the buffer asset, pushing up its price, making the strategy very costly.<sup>61</sup>

5.50 Simulations with household risk models suggest that self-insurance quickly loses its effectiveness when the correlation over time between income and the terms of trade of assets exceeds 0.5. The result is that households often limit selling their assets during crises in view of the low level of consumption that can be obtained in return. This phenomenon was observed during the 1984-85 famine in Ethiopia, when asset terms of trade collapsed. Rather than sell assets households cut their consumption drastically.<sup>62</sup> During the 1981-85 drought in Burkina Faso, livestock sales compensated for only 15-30 percent of the crop income shortfall.<sup>63</sup>

5.51 Although buying and selling cattle is a fairly common strategy for coping with income fluctuations, it is not feasible for many poor households because of the asset's lumpiness: purchasing livestock requires a significant amount of prior saving. In Tanzania, for example, a cow costs about a fifth of mean crop income, explaining why only half of households in western Tanzania owned any cattle.<sup>64</sup> Where possible, poor households try to use more divisible items as buffer stocks. In three south Indian villages, farmers held buffer stocks of crops and currency as their main risk strategy. Households with more land relied primarily on crop inventory, while poorer households held currency, reflecting inefficiently functioning credit markets in poor villages.<sup>65</sup>

5.52 Because the lumpiness and riskiness of assets (price risk, survival risk in the case of cattle) limit asset-based risk management strategies, policy inventions need to focus on providing a wider range of assets and stabilizing asset values. Saving accounts hold great promise as a safe, nonlumpy asset with a fixed value and positive return. Given some assurances about the safety of the financial institution holding the accounts, the main risk would be inflation, which would erode the value of the accounts. Several recent experiences have underscored the great demand by poor households for safe saving accounts. Bank Rakyat Indonesia has more than 16 million low-income depositors. SafeSave, an NGO in Dhaka, has adapted the principles of a traditional rotating savings and credit association; its agents collect small sums of money daily for deposit in members' accounts.<sup>66</sup>

5.53 *Informal insurance.* Households also use group-based mechanisms of informal risk sharing that rely on the social capital of a group of households. Typically, informal insurance involves a network of mutual support between members of a community or extended household, within ethnic groups, or among members of the same occupation. It often involves ties between migrants and their places of origin. The wider these networks are, the less they are subject to the same pattern of risk, and the more effective they are at risk pooling.

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<sup>61</sup> The covariance between asset values and income is not just a problem for the poor. As the recent Asian experience has shown, economic crisis usually coincides with a collapse of the securities market, undercutting the use of financial assets for precautionary purposes.

<sup>62</sup> Dercon 1999.

<sup>63</sup> Fafchamps and others 1998.

<sup>64</sup> Dercon 1998.

<sup>65</sup> Lim and Townsend 1994.

<sup>66</sup> Morduch 1999.

5.54 Theoretically, risk sharing through group-based insurance is the cross-sectional equivalent of consumption smoothing over time.<sup>67</sup> Consumption smoothing involves equating marginal utilities over time; group-based insurance involves equating marginal utilities across members of the group. When one member suffers a decline in consumption, the other members transfer resources until their marginal utilities are again equal. These networks are effective only against shocks that are common to some but not all members. This is the motivation for expanding the scope of the group: the wider it is, the less likely a shock is to affect all members.<sup>68</sup>

5.55 Empirically, a network manifests itself by transfers, gifts, or loans between members, typically undertaken with expectations of reciprocity. With respect to a household's risk management, these transfers take place on a state-contingent basis (that is, in response to a state of emergency befalling a member of the network), although the transfers also fill a social role in forging community cohesion.<sup>69</sup> The importance of gifts and transfers varies greatly. In Bulgaria, less than one in five households receives transfers; in Jamaica, more than one in two households do (table 5.6). In most countries, the bulk of transfers goes to the poorest households, for whom transfers may represent as much as a third to a half of pre-transfer income. For the poorest Russian households, that share is 80 percent.

**Table 5.6 Importance of gifts and transfers for poor households (percent)**

<i>Country (year)</i>	<i>Percent of households giving transfers</i>	<i>Percent of households receiving transfers</i>	<i>Percent of poor households receiving transfers</i>	<i>Share of transfers in pre-transfer income of poor households</i>
Jamaica (1997)	13.1	53.0	65.9	51.8
Panama (1997)	15.5	37.8	42.5	37.6
Peru (1994)	14.3	37.3	48.2	36.4
Nepal (1996)	17.4	44.7	58.1	57.9
Bulgaria (1995)	15.0	17.0	21.1	48.4
Kazakhstan (1996)	20.2	28.8	37.0	67.1
Kyrgyz Republic (1996)	15.7	35.5	61.4	48.4
Russian Federation (1997)	23.7	25.2	30.9	79.7

Note: Poor households are those in the lowest quintile of household income distribution.

Source: Cox and others 2000.

5.56 The fact that transfers occur does not necessarily mean that they are an adequate mechanism for dealing with crises. The key feature of informal insurance is the need for reciprocity, which has to be self-enforced within the group. In situations of high economic stress, norms and social pressure may be insufficient to ensure compliance. Informal insurance works best where rates of time preference are low, i.e. people put high values on future protection. In such conditions, compliance will be high for fear of exclusion from the insurance scheme in the future. This works against the poor, because they routinely have high preference for current versus future consumption. For this reason the poor, who need insurance most, are more likely to drop out of informal arrangements. Informal

<sup>67</sup> Dercon 1999.

<sup>68</sup> However, wider networks may find it more difficult to enforce the reciprocal obligations among members.

<sup>69</sup> Morduch 1999.

insurance also works better when the rate of transfers is high (because frequent interactions create trust in future compliance) and shocks are idiosyncratic (because aggregate shocks can wipe out the entire network's resources).<sup>70</sup>

5.57 Researchers have tried to measure how well informal insurance works in order to assess how much need there is for a formal safety net. Measurement has proved difficult, however. It is hard to distinguish the effects of informal insurance and self-insurance. And when the network extends past the boundaries of a given geographical entity (such as a village), measurement is especially difficult because it requires information about consumption levels and trends of all members (or a statistically valid sample of them). If insurance were perfect, all members of the network would have the same time path of consumption. Evidence from Côte d'Ivoire, India, and Thailand suggests that informal insurance exists but is far from perfect.<sup>71</sup> Evidence from China and India indicates that the poor and the landless are much less protected from income fluctuations than the rich and large landholders.<sup>72</sup>

### *Risk coping*

5.58 When a shock occurs, people cope by cashing in their insurance: selling livestock or other assets they have accumulated or calling on the network for transfers or loans. When these mechanisms fail or prove insufficient, households may try to earn additional income by increasing labor supply, diversifying labor supply across additional household members (women or children), or migrating to unaffected areas. If all else fails, households reduce consumption and go hungry. All of these responses have been observed in countries experiencing economic shocks.<sup>73</sup>

5.59 Confronted by a shock, the poor have fewer options than the wealthy. Because they own fewer physical assets, the poor are more likely to rely on increasing their labor supply. If the local labor market has collapsed in the face of a common shock, migration becomes the only answer. And if the adult males in the household migrate, women and children may need to pick up the slack locally.

5.60 Coping with shocks often involves more than economic responses such as selling assets or increasing labor supply. If a crisis is prolonged, households may delay marriage and childbearing, and families may move in together, especially in urban areas. People may resort to illegal activities (theft, robbery, prostitution). Ultimately, the social mechanisms meant to help households cope with the shock may come under pressure and break up.

### *Gender-bias and intra-household issues*

5.61 So far, this discussion of risk management has viewed the household as the unit of impact and decision. In fact, risk-sharing within the household may not be equal. The burden of the household response may fall disproportionately on the weakest members,

<sup>70</sup> Dercon 1999; Coate and Ravallion 1993.

<sup>71</sup> Ravallion and Chaudhuri 1997; Deaton 1997; Townsend 1995.

<sup>72</sup> Jalan and Ravallion 1997; Townsend 1994.

<sup>73</sup> See, for example, Kochar 1999, and Jacoby and Skoufias 1997 for India; Moser 1998 for Ecuador and Zambia; Dercon 1999 for Ethiopia.

especially women and children. Two situations are possible. A shock affecting the household as a whole may have differential impacts on different household members. Or, an individual shock (illness, loss of job) may have different effects on consumption depending upon whether it is a man or woman who is affected. There is more evidence on the first than the second situation.<sup>74</sup>

5.62 Children in poor households are especially vulnerable to fluctuations in household income and consumption. Because poor households tend to have many children, children are exposed above average to both poverty and vulnerability. Poor children are more likely than other children to be underweight, making them susceptible to irreversible harm from further declines in food consumption. In Bangladesh, children's growth was negatively affected during and after major floods.<sup>75</sup> In rural India, lack of rain increased child mortality rates, and more so for landless households than for households with land.<sup>76</sup>

5.63 The evidence on gender-bias in household responses is mixed. No such bias was found following floods in Bangladesh.<sup>77</sup> Studies of India, however, found that girls' nutrition suffered more than boys' during periods of low consumption in the slack agricultural season.<sup>78</sup> Price changes also were found to affect girls' consumption more than boys'.<sup>79</sup> For children under the age of 2, rainfall shortages were associated with more deaths for girls than for boys.<sup>80</sup>

5.64 Studies have also shown that women often suffer more from adverse shocks than men. In India, rising food prices led to larger reductions in nutrient intake for women than for men.<sup>81</sup> A similar effect was observed in Ethiopia.<sup>82</sup> Cultural factors can affect women's health risk: divorced and widowed women in South Asia often face higher mortality risks than married women because they are denied access to their late husband's property.<sup>83</sup> There is also evidence of a pro-male bias in household health and nutrition expenditures, but it is not clear whether the bias affects poor households more than others. A recent study of Pakistan found limited evidence that gender-bias in health expenditures decreases with rising income.<sup>84</sup> On balance, the evidence indicates the existence of important intra-household effects from shocks. However, this evidence comes mainly from South Asia and it is not known at this point whether similar effects are present elsewhere in the world as well.

#### *Long-term consequences of inadequate risk management*

5.65 As households become more poor and approach a line of extreme poverty or destitution they become very risk averse. The reason is that any downward fluctuation in

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<sup>74</sup> Udry 1999.

<sup>75</sup> Foster 1995.

<sup>76</sup> Rose 1999.

<sup>77</sup> Foster 1995.

<sup>78</sup> Behrman 1988.

<sup>79</sup> Behrman and Deolalikar 1990.

<sup>80</sup> Rose 1999.

<sup>81</sup> Behrman and Deolalikar 1990.

<sup>82</sup> Dercon and Krishnan 1999.

<sup>83</sup> Sinha and Lipton 1999.

<sup>84</sup> Alderman and Gertler 1997.

income could push the household below a survival point, and this has to be avoided at all costs, even at the cost of a large future income gain. Unfortunately, the poorest households often face the highest risk, while at the same time having the least resources to deal with it. Given the types of land where the poorest reside (flood plains, hillsides, marginal lands), they are most at risk from natural disasters. The poorest tend to live furthest away from health facilities and in areas with poor infrastructure. The characteristics of extreme poverty deprive the poor of almost all means to manage risks by themselves: they have little or no assets, making self-insurance impossible; weak health and bad nutrition make increasing labor supply difficult; the poorest are often excluded from group mechanisms because they are perceived to have a too high default risk.

5.66 In such situations, households face extremely unfavorable trade-offs. They must engage in short-term responses which provide an immediate gain in income, but at a very high long-term cost jeopardizing even further their development prospects. These are the situations which lead to child labor, malnourishment with lasting damage to children, and family breakdown.

5.67 A study of Côte d'Ivoire showed that, in response to a severe economic recession, households sharply increased the labor supply of children. The poorest groups increased the labor force participation rates of children the most.<sup>85</sup> In rural India, child labor was found to play a significant role in the way households respond to seasonal income variations. While on a yearly basis, the cost in terms of human capital accumulation, was found to be low, this cost could become substantial over a full schooling horizon. The effects were also found to be larger for small farm households, who were least well insured against income fluctuations.<sup>86</sup>

5.68 With regards to nutrition effects, a study for rural Zimbabwe found that the 1994-95 drought reduced annual growth rates of children aged 12-24 months by 1.5-2 centimeters. Although this study found that the reduction in growth was permanent, other studies have found that catch-up during subsequent good periods did occur.<sup>87</sup> Following the devastating floods of 1988 in Bangladesh, many households took out loans for consumption purposes, but landless households faced segmented credit markets so that they were less able to avoid negative growth effects on their children.<sup>88</sup>

5.69 Common to these unfavorable long-term effects on education and nutrition for poor children are chronic poverty traps created by low asset endowments (physical, human, social) and the inability to access credit and insurance markets needed to maximize the return from these assets. As a result the poor cannot accumulate assets to sufficient levels to escape poverty. For example, households without adequate sanitation, drinking water or social support networks may suffer more frequent illnesses and income shocks may be more severe, which precludes them from augmenting their asset base and escaping poverty. There exists a critical level of assets, below which households are forced to engage in a defensive portfolio management strategy aimed at protecting this minimal asset base at the expense of higher fluctuations in consumption. One study estimated that poor households engaged in this

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<sup>85</sup> Grootaert 1998.

<sup>86</sup> Jacoby and Skoufias 1997.

<sup>87</sup> Hoddinott and Kinsey 1998.

<sup>88</sup> Foster 1995.

strategy forego 18 percent of the income they could earn from a more entrepreneurial management strategy (but which requires access to credit).<sup>89</sup>

5.70 Dysfunctional factor markets can also create or aggravate poverty traps. Child labor is an example: when a crisis strikes and households cannot borrow or when adult unemployment is high or wages low, children are pulled out of school and sent to work. The resulting lower educational attainment represents a life-long loss in income earning ability for these children. Failures in the credit or labor markets thus transmit poverty and vulnerability across the generations.<sup>90</sup>

### **Policies for improving risk management**

5.71 The policy response to risk should concentrate on three strategies:

- Preventing risk
- Mitigating risk
- Coping with shocks (alleviating their impact)

Each strategy can include formal and informal mechanisms, provided by both public and private sectors.

5.72 In principle, the best approach is to eliminate the risk of downward fluctuations altogether. Risk mitigation, which reduces the possible impact of a shock, is the next preferred option. Coping strategies are a residual approach that addresses failures of the first two.<sup>91</sup> However, each intervention carries direct and opportunity costs and some prevention and mitigation strategies can be prohibitively expensive, especially when dealing with infrequent but catastrophic shocks. In most developing countries today, however, the problem is one of insufficient attention to risk prevention and mitigation and too much reliance on interventions after a disaster strikes. The experience in coping with the Asian crisis has shown that it is difficult to put effective safety nets in place after the fact. Interventions following the 1998 floods in Bangladesh were effective because of the network of NGOs and other mechanisms that were already in place and ready to be activated to help the poor.

5.73 Thus the balance needs to shift from policies for coping to policies for reducing and mitigating risk—providing better access to credit and financial assets, managing labor market risk better (especially child labor), and providing health insurance. Such a shift would benefit the poor by allowing them to manage risk more adequately and so to pursue higher-risk, higher-return activities that could pull them out of poverty. By contrast, pure coping mechanisms may merely reinstate the pre-shock low-level equilibrium, thus perpetuating poverty traps and the vicious cycle of low risk-taking and low returns.<sup>92</sup>

5.74 In practice, safety nets need to combine mitigation and coping functions. The coping function is vital for dealing with the effects of global trends. These trends, and

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<sup>89</sup> Zimmerman and Carter 1998.

<sup>90</sup> Barrett and Carter 1999.

<sup>91</sup> This three-pronged policy response to risk is elaborated further in Holzmann and Jorgensen 1999.

<sup>92</sup> Holzmann and Jorgensen 1999.

associated policy reform, will inevitably create winners and losers. Price liberalization, for example, may benefit a nation as a whole, but individual households will gain or lose depending on their net status as producers or consumers. The social safety net needs to serve as an automatic compensatory mechanism for unwanted distribution effects of policy reform.

5.75 Any poverty reduction strategy needs to provide security for the poor. This does not mean that every country has to set up large-scale comprehensive social safety nets. Rather, each country needs to construct its safety net as a modular system based on the relevant patterns of risk and the appropriate mix of providers (public and private) and arrangements. The first step is to understand the general conditions under which a safety net needs to complement existing risk management arrangements. The next step is to identify specific types of risk (old age, labor market, health) and the mechanisms that can be used to deal with them.

#### *General principles of safety nets and risk management*

5.76 The possibility to prevent or reduce income risk applies only to some categories of risk. For example, the construction of a dam can eliminate the risk of flooding. Immunizations and other public health campaigns can reduce the risk of illness. Other policies may be undertaken primarily for other purposes and yet contribute to risk reduction. Good education policies can reduce child labor. Environmental policies can limit deforestation, reducing damage from hurricanes and death from mudslides. Sound macroeconomic policies can reduce the risk of crises, high inflation, and unemployment.

5.77 Our focus in this chapter is primarily on risk mitigation and coping. As we have seen (table 5.4), mitigation strategies consist of portfolio diversification and insurance (self-insurance, informal, and formal insurance). In rural settings, the former can be made possible by diversification of crops available to farmers and by the provision of technology and extension service to make this diversification possible. Opening up trading opportunities, through infrastructure investments for example, can also stimulate this diversification. However, liberalizing markets (e.g., through privatization of state commodity boards) can have mixed effects and does not always provide benefits to the poor. In some cases, new middlemen have stepped in between farmers and export traders, and the gain from open trade has accrued mostly to them.

5.78 Policies should make it easier for the poor to build up assets while also reducing the covariance between asset values and income. Covariance is especially problematic in rural areas, where asset values (livestock) often move in tandem with crop prices. This problem could be addressed through better integration of asset markets with the wider economy. Doing so requires investments in transport infrastructure, dissemination of price information, and removal of structural and institutional market barriers. Macroeconomic stability would also promote more stable asset prices because inflation often exacerbates the deterioration of asset terms of trade relative to consumption goods. And easier access to credit would facilitate the acquisition of lumpy assets such as cattle.<sup>93</sup>

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<sup>93</sup> Dercon 1999.

5.79 A critical area of intervention is the provision of insurance, especially for covariant risk. As we have seen, self-insurance has limitations, mainly because the poor are unable to accumulate adequate assets, especially in conditions of successive shocks. And informal insurance, which relies on risk-sharing across a community or network, is ineffective for covariate shocks.

5.80 The key question in this context is whether market- or government-provided mechanisms are more cost-effective than informal mechanisms. Can the state step in and provide less costly insurance for risks which are currently self-insured by the poor or insured through group-based risk sharing? Because the public sector is able to pool risks over a larger area, it should be able to provide insurance at a lower cost than informal agents can. Publicly provided insurance could thus yield a net gain to society—if the state is perceived as credible and the insurance scheme is fiscally sustainable. But if trust in the state is low, few people will be willing to give up their personal or group insurance mechanisms and put their faith in the government system. And even if people believe in the state’s intent to provide a safety net, the state may not be able to provide the insurance during a crisis for fiscal reasons. People who had given up informal insurance mechanisms would then be left worse off than before the state offered insurance. Relative cost and effectiveness, trust, and sustainability thus all need to be considered in deciding on government intervention.

5.81 Much concern has been expressed about formal safety nets displacing self-insurance or group-based mechanisms. Empirical estimates of this crowding-out effect vary. A study of the urban Philippines estimated that government-provided unemployment insurance would displace 91 percent of private transfers to the unemployed.<sup>94</sup> Another study estimated that the provision of a basic pension benefit to black South Africans displaced only 20-40 percent of private transfers to the elderly.<sup>95</sup> Studies of other countries found similar displacement rates.<sup>96</sup>

5.82 Displacements of private transfers need not imply a social loss. In fact, if poverty-reduction effects are taken into account along with the insurance objectives, there may well be a net social gain despite private displacements.<sup>97</sup> In South Africa, many of the displaced transfers were from young to old households, both of which were poor. So introduction of the pension program left more money in the pockets of poor young households. It also covered many elderly who had received no private transfers. Overall, then, the pension scheme significantly strengthened South Africa’s social safety net, despite the displacement of private transfers.<sup>98</sup>

5.83 What then are the conditions under which the state should step in and provide a social safety net helpful for the poor, and how should it be done? The general answer is that it depends on the type of shock likely to occur and on the nature of the existing private insurance arrangements.

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<sup>94</sup> Cox and Jimenez 1998.

<sup>95</sup> Jensen 1998.

<sup>96</sup> Cox and Jimenez 1998.

<sup>97</sup> Morduch 1999.

<sup>98</sup> Morduch 1999; Jensen 1998.

- If informal insurance arrangements adequately insure against idiosyncratic shocks, the state should step in to insure common shocks. In most circumstances, providing this coverage will improve overall risk management and increase welfare, without crowding out the informal insurance.<sup>99</sup> However, since households' overall risk exposure will have declined, self-insurance (precautionary savings or other asset build-up) may decline.<sup>100</sup>
- Where informal insurance is not effective—because of enforcement problems or because shocks are too frequent or too large—household welfare could be increased if the social safety net were to insure idiosyncratic shocks as well as common shocks. Whether the state or private insurers should provide the coverage would depend largely on the type of shock. The state is often best able to cover covariant shocks, but most predominantly idiosyncratic shocks may be better handled by private providers (communities, insurance firms). The government's role should then be to facilitate and, if necessary, regulate the private provision.<sup>101</sup>
- Where group-based informal insurance works well, the state should avoid safety net arrangements targeted to individuals or households. Most safety nets target specific types of people: the ill, the elderly, women-headed households with many children, and the like. The danger is that improving the risk position of one person who is a member of a group-based insurance scheme creates an incentive for that person to drop out of the group. If this leads to the collapse of the group scheme, members not covered by the safety net could end up worse off. The solution is to target broad groups (say a credit program for the entire community or groups within it), but doing so can be difficult because insurance groups do not always coincide with communities or other easily identifiable target groups. Of course, if the safety net protects almost everyone, the disappearance of informal insurance arrangements may not matter, at least if the formal safety net is more cost effective and sustainable.<sup>102</sup>

5.84 Ultimately, decisions about safety nets need to weigh the negative effects of displacement against the positive effects of long-term improvements in the welfare of poor households. The role of insurance is to improve households' ability to manage risk so that poor households can engage in higher-risk, higher-return activities that can lead them out of poverty. Provision of safety nets is not the only way to achieve this goal. Stable macroeconomic policies may do more to reduce employment risk than public works programs. However, sound economic policies may increase risk to certain categories of households. Trade liberalization, for example, may lower the cost of imported clothes and utensils, reducing demand for weaving and handicrafts—two activities with low entry costs frequently used by the poor to diversify income.<sup>103</sup> Hence the decision about providing

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<sup>99</sup> Dercon 1999.

<sup>100</sup> Deaton 1991.

<sup>101</sup> Morduch 1999; Baulch and Hoddinott 1999.

<sup>102</sup> Dercon 1999.

<sup>103</sup> Dercon 1999.

safety nets needs to be viewed in the holistic context of economic and social policies and their impact on household risk.

5.85 Where there is a strong concern for the poor, especially the very poor, the balance generally shifts in favor of the provision of a safety net by the state.<sup>104</sup> This is because among the poorest there are fewer instances where self-insurance or group insurance works well. The incentives of group-based insurance schemes, especially the need for sustainability, are such that they do not favor inclusion of the poorest, who are perceived of being at greater risk of default.<sup>105</sup> The same is often the case for group-based credit arrangements.<sup>106</sup> Similar concerns lead to exclusion of the poor from formal market-based insurance provision. Hence, there are fewer situations likely where public provision of a safety net would undercut existing arrangements involving the poorest.

5.86 Furthermore, the insurance mechanisms used by the poor are ineffective against repeated shocks<sup>107</sup> and they tend to be costly and inefficient. Indian farmers sacrifice as much as 25 percent of average income to reduce exposure to harvest risk.<sup>108</sup> And when the insurance fails altogether, it can lead to child labor and malnourishment.

5.87 All this adds up to a powerful case for public intervention to provide insurance that protects the poor from losses, especially losses that may push them deeper into poverty. There are a number of practical issues to be considered first however. These include obtaining information about the people to be insured and dealing with the political economy of providing insurance.

5.88 Obtaining information about people to be insured is costly. That is why so many traditional credit and insurance institutions are local. The local moneylender or members of a rotating savings and credit association have a better chance of knowing who is a bad risk than would an outside insurance program.<sup>109</sup> Asymmetric information creates moral hazard<sup>110</sup> and adverse selection problems,<sup>111</sup> leading to the underprovision of insurance (relative to the social optimum) by private providers. Because information problems are especially acute in the case of the poor, the potential social gains that accrue when the government provides insurance to the poor are large.

5.89 The government has no comparative advantage in obtaining information at the local level as to who should be insured. For this reason a co-production approach is frequently recommended: the government provides the financial and technical means, but local NGOs or other institutions or peer-monitoring is used for local implementation and monitoring. Relying on community-based targeting is a variation of this approach: the government provides funds to communities, which are responsible for identifying poor beneficiaries (box 5.2).

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<sup>104</sup> Sinha and Lipton 1999.

<sup>105</sup> Besley 1995.

<sup>106</sup> Cohen and Sebstad 1999.

<sup>107</sup> Sinha and Lipton 1999.

<sup>108</sup> Walker and Ryan 1990.

<sup>109</sup> Sinha and Lipton 1999.

<sup>110</sup> Moral hazards, in this context, means the possibility that people will engage in riskier behavior once they know the risk is insured.

<sup>111</sup> Adverse selection refers to the tendency of people most exposed to a certain risk to apply for insurance.

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**Box 5.2 Is community-based targeting a good idea?**

The success of community-based arrangements in providing local public goods (roads, irrigation systems) and managing common property natural resources (forests, grazing lands) relies on the common interest of the community agents, who are both agents and beneficiaries. If one community member free rides, it lowers the benefits to all others. In community-based management of safety nets, this link is lost. The community agents who must allocate benefits are not the recipients. Hence the balance of advantages and disadvantages is less clear (see table).

Should targeting be community based? Much depends on which entity is charged with allocating benefits. In Uzbekistan, quasi-religious community groups known as Mahallas target child benefits and other types of social assistance to low-income families. They have considerable discretion over amounts and criteria of assistance. An external review concluded that benefits were targeted fairly well.

In Albania, the Economic Support Program helps poor rural households and people who lost their jobs in the transition. Local governments receive block grants from the program to allocate within their communes. Local targeting was found to compare favorably with safety net programs in other countries, although there is evidence that the central allocation of grants to localities has in part been politically motivated, which has reduced targeting efficiency.

In Armenia, subsidies for school textbooks are allocated locally by parent-teacher associations or the school principal. The program has not been formally evaluated yet, but informal appraisals suggest that the system has been well accepted by parents and it may be expanded to other types of aid.

**Table: Advantages and disadvantages of community-based targeting**

<i>Advantages</i>	<i>Disadvantages</i>
Better information on needy households	Program may be used to serve elite interests
Allocation criteria are adapted to local needs	Participation of community leaders may have high opportunity cost
Decentralized administration is more efficient	Allocation rules may cause increased divisiveness in the community
Community mobilization may build social capital	Externalities across communities may not be taken into account

Source: Conning and Kevane 1999.

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5.90 Political economy considerations may strengthen or weaken the case for publicly provided risk mitigation. The state may well be the best agent to provide insurance, but the government may lack the institutional strength, financial resources or management capacity to undertake the task. Overall capacity building inside the government may be required. The political support needed to allocate resources may also be lacking since it requires getting the rich to support a program that does not benefit them. If the insurance program is not self-supporting, it may have to be funded out of general tax revenue, at the expense of other programs that may benefit the rich. Public risk mitigation may also take away some profit opportunities from the rich (from moneylending) and undercut patron-client relationships between the rich and the poor by making the poor more independent.<sup>112</sup> Allowing the rich (or at least the middle class) to participate in some insurance programs and convincing them that insurance may be less costly than other poverty reduction efforts are the key to gaining political support for publicly funded insurance. Above all, as the first part of this Report has argued, the poor need a channel for dialogue with government to address concerns of risk and vulnerability.

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<sup>112</sup> Sinha and Lipton 1999.

*Specific instruments and the lessons of experience*

5.91 While the general principles discussed above are useful in framing choices for policy makers, it is their application to specific cases, and the lessons learned from experience, which really matter. A variety of tools are available for public intervention to improve the ability of households to manage risk. In the remainder of this chapter we discuss seven tools which are especially relevant for the poor: old-age assistance and pensions, unemployment insurance and assistance, workfare programs, health insurance, social funds, microfinance programs, and cash transfers. While some of these instruments address primarily one type of risk, others are useful for a wide range of risks (table 5.7).

**Table 5.7 Risks and risk management instruments**

<i>Type of risk</i>	<i>Pensions and old-age assistance</i>	<i>Unemployment insurance and assistance</i>	<i>Workfare</i>	<i>Health insurance</i>	<i>Social funds</i>	<i>Microfinance</i>	<i>Cash transfers</i>
Old age	X			X		X	X
Illness, injury, and disability				X		X	
Violence				X			
Harvest failure			X		X	X	X
Labor market risk		X	X		X	X	X
Food price fluctuations					X	X	X
Natural disasters		X	X	X	X	X	X
Economic crises		X	X		X	X	X
War and civil strife			X	X	X	X	X

Source: Based on discussion in the Report.

5.92 *Old-age assistance and pensions.* As we argued earlier, the risks associated with old age have economic as well as social dimensions, and policies need to address these aspects. In view of the social isolation experienced by many elderly, facilitating access to community groups or associations that cater to the elderly should be a cornerstone for social policy toward the elderly. Another priority is to ensure that health facilities address the needs of elderly people who often cannot travel to far-away clinics.

5.93 On the economic side, many of the elderly are poor because they have been poor all their lives.<sup>113</sup> General poverty reduction policies that increase people's income during their working lives will make them better off during retirement as well. Better risk management and higher incomes for today's prime-age workers will also help them support their parents financially.

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<sup>113</sup> Flanagan 1999.

5.94 Only 16 percent of the labor force in low- and middle-income countries participate in formal pension schemes.<sup>114</sup> In the poorest countries in Sub-Saharan Africa and South Asia, pensions cover less than 10 percent of the labor force.<sup>115</sup> In the medium term, policies addressing old age risk will have to make it easier for the elderly to continue working. Retraining and workfare programs adapted for older workers are two options.<sup>116</sup> In many countries, the extended family still provides most old-age support. Policies can be developed that support the elderly through their families by giving direct assistance to families that care for live-in elderly. Malaysia provides tax rebates to children who care for their parents.<sup>117</sup>

5.95 In middle-income countries, social assistance and formal pension arrangements will increasingly be needed to take care of the elderly. Social assistance should cover the poorest and oldest elderly (categories that frequently overlap) and those without family support. Widowed women will often make up a large fraction of this group.<sup>118</sup> For pension systems, the general recommendation is for a multipillar system that combines a publicly managed defined-benefit plan with a privately managed defined-contribution plan, supplemented by voluntary retirement savings. The publicly managed plan is funded out of general tax revenue and can address poverty and equity concerns. The privately managed plan is fully funded by participant contributions and serves as wage replacement after retirement.<sup>119</sup> Several countries, especially in Latin America and Eastern Europe, have established multipillar pension systems. The successful management of such pension systems requires a significant administrative capacity. Coverage remains an issue: many informal sector workers and women who have worked in the household rather than the labor market for most of their lives have remained uninsured.<sup>120</sup>

5.96 *Unemployment insurance and assistance.* Labor market risk can be significantly reduced by improving the functioning of labor markets. Many labor markets in developing countries are segmented and excessively regulated. Reform needs to focus on labor laws and standards, job search assistance, training for dismissed workers and labor-market entrants, microenterprise development, and wage flexibility.<sup>121</sup> Improving relationships among labor market partners (employers organizations, trade unions, and government) and the processes of collective bargaining and contracting should also increase labor market effectiveness.<sup>122</sup>

5.97 Even a well-functioning labor market will not fully eliminate the risk of becoming unemployed or underemployed, however. Unemployment benefits are needed to prevent displaced workers from suffering large income losses and falling into poverty. In some countries the link between unemployment and poverty is very strong. A study of countries in Eastern Europe and the former Soviet Union found a 40-80 percent higher

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<sup>114</sup> For comparison, in OECD countries, pension coverage is 85 percent of the labor force (Palacios and Pallares-Miralles 1999).

<sup>115</sup> Palacios and Pallares-Miralles 1999.

<sup>116</sup> Flanagan 1999.

<sup>117</sup> James 2000.

<sup>118</sup> Flanagan 1999; Grootaert and Braithwaite 1998.

<sup>119</sup> World Bank 1994.

<sup>120</sup> James 2000.

<sup>121</sup> Dar and Tzannatos 1999.

<sup>122</sup> World Bank 1995.

incidence of poverty in households with one unemployed member than in households without an unemployed member. Households with several unemployed members had poverty rates twice or more the national average in some countries.<sup>123</sup>

5.98 Unemployment insurance, the traditional means of mitigating the risk of job loss, is not appropriate for most developing nations, because of their low administrative capacity, large informal sectors, and covariate shocks affecting the labor market. Better options are means-tested social assistance and public work programs (workfare).<sup>124</sup> Means testing has proved difficult in most settings, but promising approaches that use easily observable indicators for targeting are being pilot tested.<sup>125</sup>

5.99 *Workfare programs.* Public work programs, while they can be designed to be self-targeting through appropriate wage rates, are not necessarily an inexpensive way of delivering benefits to the poor. Their cost-effectiveness needs to be compared with alternative transfer programs. The cost per created person-day of employment varies greatly across countries, ranging from as low as \$1-\$2 in several South Asian programs to \$8 in Bolivia. The cost depends on the wage rate, type of projects undertaken, costs of local private contractors, and administrative effectiveness. Wages typically represent 30-60 percent of total costs.<sup>126</sup>

5.100 A well-designed and well-funded workfare program is a mixture of risk mitigation and risk coping. To fulfill the role of risk mitigation, the program must inspire confidence in the target population that the program will continue to be available after a crisis strikes. Only if the government is perceived as credible will the presence of the program induce households to give up costly self-insurance or group insurance, freeing those resources for other productive purposes.<sup>127</sup> The program fulfills its role as a coping mechanism by providing jobs when a crisis strikes. Providing households with income following a crisis helps them avoid costly and damaging strategies (selling assets, reducing food intake). Workfare programs like Trabajar in Argentina and the Maharashtra Employment Guarantee Scheme in India have successfully created employment for the poor (box 5.3).

5.101 The growing informalization of economies calls for special interventions. A key characteristic of the informal sector is the blurring of boundaries between the economies of households and enterprises. Community-based and integrated provision of insurance are two innovative approaches showing promise. Such programs recognize the strong links between labor market risks and other risks in the informal economy. In the Philippines, the Angono Credit and Development Cooperative (ACDECO) extends loans for business development, housing repair, and medical and educational purposes to its 1,700 member small businesses. ACDECO combines the loans with loan repayment insurance in case of death, and life and disability insurance. The Zambuko Trust, the largest microenterprise

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<sup>123</sup> Grootaert and Braithwaite 1998.

<sup>124</sup> Holzmann and Jorgensen 1999.

<sup>125</sup> Grootaert and Braithwaite 1998.

<sup>126</sup> Subbarao 1997.

<sup>127</sup> Ravallion 1991; Baulch and Hoddinott 1999.

assistance program in Zimbabwe, added an insurance scheme to its offerings in 1997 to cover loan repayment in case of death and to assist families with burial costs.<sup>128</sup>

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### Box 5.3 Principles of successful workfare programs

Many programs for the poor have experienced high leakage of benefits to the nonpoor. This problem has stimulated interest in self-targeting schemes, among which public work programs (workfare) have been the most effective. Two successful workfare programs are the Maharashtra Employment Guarantee Scheme in India and the Trabajar program in Argentina.

Launched during the severe drought of 1970-73, the Maharashtra scheme expanded rapidly to reach an average of 500,000 workers monthly. In a typical year, the scheme provides 100 million person-days of employment. Argentina set up the Trabajar II program in the mid-1990s (as an expanded and reformed version of an earlier program) to cope with sharply rising unemployment, which reached 18 percent in 1996-97. Unemployment was strongly concentrated among the poor.

*Project selection.* Both programs concentrate mainly on infrastructure projects (roads, irrigation schemes, embankments). Projects are proposed by local authorities in collaboration with communities and NGOs. Project selection is critical to the success of the program. Projects must use labor-intensive technologies, benefit the local community, and target poor areas.

*Wage rate and self-targeting.* To ensure participation by the poor and to maintain incentives for workers to move on to regular work when it becomes available, programs need to set wage rates no higher than the average wage for nonskilled labor. Trabajar set the wage rate at about 75 percent of the average monthly earnings from the main job of the poorest 10 percent of households in Greater Buenos Aires. The Maharashtra scheme set the wage rate to that of rural unskilled labor. Both programs have been highly successful in reaching the poorest of the poor. About 90 percent of Maharashtra scheme participants were living below the local poverty line; four of five Trabajar participants were poor by Argentine standards. For the poorest 5 percent of participants, program benefits constituted 74 percent of their pre-program income.

*Benefits to the poor.* Since poor people can rarely afford to be totally idle, they often give up some form of income to join the workfare scheme. Estimates suggest that forgone income could represent as much as 50 percent of the wages paid by the scheme. However, the guaranteed availability of employment bestows major insurance benefits to the poor. Incomes in villages where the Maharashtra scheme operated had just half the variability of incomes in villages without the scheme. The poor also derive indirect gains from workfare programs if the infrastructure created benefits them. Experience is mixed. In some cases better-off households have appropriated the assets created (which is not an unqualified liability, since it may increase the political acceptance of the scheme by the rich, as was apparently the case in Maharashtra).

*Principles for success.* Workfare programs can improve their effectiveness by adhering to several principles.

- The wage rate should be determined by the local market wage for unskilled labor, not by the program's budget. If resources are insufficient to meet demand, the program should target areas with high concentration of poor people. Using additional eligibility criteria for screening is to be avoided.
- Wage schedules should be gender neutral. Participation of women can be encouraged through suitable project selection (local work sites) and provision of child care.
- Labor intensity should be higher than the local norm for similar projects.
- Communities should be involved in project selection to maximize the capture by the poor of indirect benefits of the infrastructure created.
- To maximize risk mitigation effects, the program should be available at all times, expanding automatically during crises, as demand increases.

Source: Ravallion 1991, 1999; Jalan and Ravallion 1999.

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<sup>128</sup> Lund and Srinivas 1999.

5.102 *Health insurance.* Several studies have shown that many households in developing countries are unable to insure against major illness or disability. There are significant economic costs associated with these illnesses, although more from income loss than medical expenditures. The policy response should be to provide health insurance and to direct public health spending to facilities serving primarily the poor (or poor areas).<sup>129</sup> Some middle income countries can finance universal health insurance, as Costa Rica and the Republic of Korea did in the 1980s. Most low-income countries, however, need to choose between providing substantial benefits to a small share of the population and providing limited benefits to a large share of the population.

5.103 Most low-income countries have chosen to provide minimum benefits for all illnesses (“first dollar coverage”) rather than full insurance for infrequent but very costly illnesses.<sup>130</sup> At first glance the choice appears to be pro-poor, because benefits are provided regardless of income level and there is no deductible or co-payment. Evidence suggests, however, that it is catastrophic illnesses and disabling injuries, not frequent and minor illnesses, that create problems for the poor. Households in Indonesia were found to be able to smooth more than 70 percent of consumption fluctuations caused by moderate health shocks but only 40 percent of fluctuations caused by large health shocks. An average hospital stay costs 131 percent of the annual income of the poorest quintile of households, but only 24 percent of the income of the richest quintile.<sup>131</sup> In China, households could smooth only 6 percent of consumption fluctuations caused by overall medical care costs, but 100 percent of fluctuations involving health care expenses of less than 50 yuan.<sup>132</sup>

5.104 Public provision of insurance against catastrophic health shocks would thus significantly improve the welfare of the poor in situations where there is evidence of households’ failure to insure major health shocks by their own means. The evidence further suggests that the premiums for such insurance can be quite low (because major illness is rare) and well below households’ willingness to pay.<sup>133</sup> The pro-poor catastrophic health insurance scheme that Singapore implemented combines mandatory medical saving accounts with optional backup insurance for major expenses (box 5.4).

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#### **Box 5.4 Catastrophic health insurance: the Singapore model**

Between 1984 and 1993, Singapore set up a three-tiered system of health insurance: Medisave, Medishield, and Medifund.

The program insures intermediate-level health risks through individual or household Medisave accounts. These mandatory saving accounts, part of Singapore’s compulsory social security system, are funded by a 40 percent payroll tax (shared equally by employers and employees). Of this contribution, 6-8 percent is allocated to Medisave accounts, which can be used to pay hospitalization expenses of up to S\$300 a day. Individuals are expected to cover minor health risks out of pocket or through private insurance.

Catastrophic health risks are covered through Medishield, optional backup insurance for expenses exceeding the maximum coverage provided by Medisave. Eighty-eight percent of Medisave account holders have opted for Medishield coverage. The co-insurance rate is 20 percent, and the high deductible varies with the comfort class of the medical facility.

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<sup>129</sup> Birdsall and Hecht 1995.

<sup>130</sup> Gertler 2000.

<sup>131</sup> Prescott and Pradhan 1999.

<sup>132</sup> Gertler 2000.

<sup>133</sup> Gertler 2000.

Equity backup is provided through Medifund, to remedy the nonprogressive nature of Medisave accounts and Medishield. Faced with a catastrophic health shock, the poorest quintile of households would have to spend 55 percent of their annual per capita expenditure, while the richest quintile would spend only 21 percent. The subsidies of Medifund are differentiated by class of facility and thus self-targeted to poorer users. As a last resort, patients who are unable to pay all their medical bills can apply for a means-tested grant from their Hospital Medifund Committee, financed from the government's budget surplus.

Source: Prescott and Pradhan 1999.

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5.105 Chronic illnesses and injuries that lead to long-term disability affect an estimated 5-10 percent of the population in developing countries.<sup>134</sup> Disability can lead to poverty, and poverty adds to the risk of becoming disabled. Disability is associated with low education, poor nutrition, high unemployment and underemployment, and low occupational mobility—all factors that increase the likelihood of being poor. Much disability in developing countries is caused by injuries or by communicable, maternal, and prenatal diseases, many of them preventable. In the long run policy efforts need to focus on prevention, especially on maternal and child health care. Programs to eradicate measles, to fight onchocerciasis (river blindness), and to reduce micronutrient deficiencies have already greatly reduced disabilities.<sup>135</sup> Preventive programs that keep simple diseases from becoming chronic disabilities are especially important for children.<sup>136</sup> War and civil conflict have also caused many disabilities. Landmine accidents have increased sharply over the past 15 years: a study of four war-affected countries found that 6 percent of households had a member who had been killed or permanently disabled by a landmine.<sup>137</sup>

5.106 People with disabilities incur extra medical costs and are often marginalized or excluded from services and community activities.<sup>138</sup> Most people with disabilities are dependent on their families and cannot increase their labor supply to respond to income crises. One study found that 61-87 percent of landmine victims went into debt to pay their medical bills, and 12-60 percent had to sell assets.<sup>139</sup> Prevention and better health care hold the key to reducing disabilities in the future. For people who are already disabled, community-based rehabilitation programs and public transfers to the families that care for them are needed.<sup>140</sup>

5.107 *Social funds.* Social funds are agencies to help finance small-scale projects identified by poor communities. The communities usually cofinance and implement the projects. Social funds have become very popular since the Bolivian government set up the first one in 1987 as a response to a general economic downturn. Currently, almost 50 countries, most in Latin America and Sub-Saharan Africa, operate social funds or similar entities. The world's largest social fund is in Egypt. Recently, Eastern European and Central

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<sup>134</sup> Part of the difficulty in measuring the incidence of disability stems from definitional confusion. WHO (1980) defines disability as "any restriction or lack (resulting from an impairment) of the ability to perform an activity considered normal for a human being." What constitutes "normal" activity is clearly open to debate. Also, many surveys measure impairment rather than disability. There is furthermore a longstanding debate as to whether a corrected impairment constitutes a disability. See the discussion in Elwan (1999).

<sup>135</sup> Elwan 1999.

<sup>136</sup> Khan and Durkin 1995.

<sup>137</sup> Andersson and others 1995.

<sup>138</sup> Abu-Habib 1997; Harris-White 1996.

<sup>139</sup> Andersson et al 1995.

<sup>140</sup> Elwan 1999.

Asian countries have begun to set up social funds, 10 of which are already in operation or preparation.

5.108 The first social funds were set up to provide temporary employment as a risk coping mechanism. Some are still used to respond to emergencies, such as Hurricane Mitch in Central America, civil wars in Cambodia and Angola, the earthquake in Armenia, and drought in Zambia. Over time, however, many social funds have taken on a more permanent character, and they now address a wider range of objectives, including infrastructure, community development, social services, and support for decentralization.<sup>141 142</sup> Social funds have also gradually assumed more of a risk mitigation role, supporting income-generation projects, stimulating school enrollment and health center use, and strengthening the social capital of communities. They have proved to be flexible, quick-responding, and cost-effective. The record is mixed, however, when it comes to sustainability and poverty reduction.

5.109 Social funds use three targeting devices to reach the poor: selection of investments (mainly basic services), screening of projects (to ensure that most beneficiaries are poor), and geographical targeting of poor areas. The poverty targeting strategy and the demand-driven approach of social funds are sometimes in opposition. To enhance their effectiveness, many funds initially financed projects in better-off communities with good organizational skills. The poorest communities, which often have difficulties putting investment proposals together, received fewer benefits. To address the problem, some social funds (Argentina, Chile and Romania) have supported capacity building in poor communities. Other funds have temporarily assumed some of the implementation responsibilities while the communities increase their capacity (box 5.5). Several funds are improving their poverty targeting. In Malawi and Zambia, social funds are introducing poverty maps. In Mauritania, town meetings are held in each neighborhood to reach the urban poor.<sup>143</sup> Communities often view social funds as responsive to their priorities and helpful in promoting social cohesion. In fact, beneficiary assessments have identified community orientation as one of the strengths of social funds.<sup>144</sup>

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#### **Box 5.5 The Eritrean Community Development Fund**

After the war, the government of Eritrea committed itself to providing each province with basic economic and social infrastructure. Many poor communities lacked the capacity to implement the projects themselves, however. Eritrea's innovative solution was to combine social fund and public work mechanisms by forming the Eritrean Community Development Fund. The fund combines the bottom-up selection of projects with the top-down selection of intervention areas. Contracting procedures are kept flexible to reach even communities without implementation capacity. If a community cannot form a community project committee to supervise a project, the fund takes over procurement, contracting, and technical supervision. If necessary, the fund even manages the community's contribution. This flexible approach is combined with an ambitious capacity building program, which trains community and local government staff in project design, maintenance, and operation activities.

Source: Frigenti and others 1998.

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<sup>141</sup> Jorgensen and Van Domelen 1999; Frigenti and others 1998.

<sup>142</sup> This diversity of objectives means that social funds can be a delivery vehicle for a wide range of programs. In that sense, they are different from specific interventions such as pensions or health insurance discussed elsewhere in this chapter.

<sup>143</sup> Jorgensen and Van Domelen 1999; Frigenti and others 1998.

<sup>144</sup> Van Domelen and Owen 1998.

5.110 *Microcredit and savings services (microfinance)*. Microfinance programs can help the poor smooth consumption during a crisis. Access to such credit may prevent the need for distress sales of assets and help the poor reacquire productive assets destroyed during a natural disaster. Microfinance programs do more than help households cope with risk, however. The programs provide households with the capital needed to create or expand micro enterprises. Microfinance thus helps households diversify their sources of income and reduces their vulnerability to income shocks. This is especially important for women and households headed by women, which often have difficulty getting credit.

5.111 Microfinance programs have been more successful in reaching moderately poor and vulnerable (not necessarily poor) households than extremely poor households. Although clients vary, most programs reach clients who are just above or just below the poverty line. Empirical evidence indicates that clients use loans more often to protect against risk ahead of time than as ex-post coping mechanism, i.e. loans are rarely used directly for consumption. Instead, both poor and nonpoor clients used loans to smooth consumption by smoothing income flows.<sup>145</sup>

5.112 In addition to diversifying income sources, loans help households accumulate a variety of assets: physical and productive (vehicles, equipment, housing, livestock), financial (a savings account), human (education and health care), and social (contributions to funerals and weddings, or to networks of mutual support).<sup>146</sup> When used as a coping device, loans usually go into rebuilding assets rather than direct consumption.

5.113 As a risk management tool, the key feature of microfinance programs is the knowledge that loans will be available in time of need, making it possible for households to dispense with less effective and less desirable strategies (child labor, money under the mattress). There is a parallel here with employment guarantee schemes where, too, the confidence in the future availability of the scheme is the key to its success as a risk management tool. Clients often go to great lengths to repay their loans so as not to lose future access to loans. For example, clients continued to replay loans during and after the floods in Bangladesh.<sup>147</sup> Evidence suggests that microcredit has also improved the lives of poor women. It has strengthened their bargaining position with their husbands, boosted their self-confidence, and increased their participation in public life.<sup>148</sup>

5.114 The success of microfinance in reducing vulnerability through income diversification and asset accumulation suggests that these programs should be a priority for government and donor support.<sup>149</sup> The criticism that loans will be “diverted” by households for consumption is not supported by the evidence. However, microfinance products need to be redesigned to reach poorer households. Loan size and repayments need to be made more flexible and correspond better to the income flows and repayment capacity of borrowers.<sup>150</sup>

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<sup>145</sup> Sebstad and Cohen 1999.

<sup>146</sup> Sebstad and Cohen 1999 contain many references documenting these different uses of loans.

<sup>147</sup> Zaman 1999.

<sup>148</sup> Sebstad and Cohen 1999.

<sup>149</sup> The specific roles of government, donors and NGOs in the delivery of microfinance programs remains an open question. Experiences across countries vary widely. However, programs operated directly by governments tend to have higher default rates (Morduch 1999).

<sup>150</sup> Sebstad and Cohen 1999.

Combining microfinance products with savings and insurance products so that clients would not have to take out loans to cope with illness or death would increase program effectiveness (box 5.6). Bank Rakyat Indonesia and SafeSave in Bangladesh demonstrate the potential of combining microcredit with savings accumulation; other microfinance programs have successfully introduced life insurance, at low rates and with limited benefits (burial costs and repayment of debts).<sup>151</sup>

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**Box 5.6 The Self-Employed Women's Association (SEWA) of Ahmedabad, India**

Established in 1972, the Self-Employed Women's Association (SEWA) is a registered trade union for women in India's informal sector. SEWA's 220,000 members are hawkers, vendors, home-based workers, and laborers. In addition to performing conventional labor union functions (ensuring minimum wages and work security), SEWA provides legal aid and operates a bank and a social security scheme. The bank offers saving accounts and loans to members. The social security scheme, which insures about 14 percent of SEWA members, covers health, life, and asset insurance. About a third of costs are covered by premiums. The rest is financed by a grant from the German Technical Development Agency (GTZ) and subsidies from the Indian Ministry of Labor in collaboration with two private insurance companies. SEWA views this arrangement as a first step toward increased contributions by member and self-sustainability. The combination of microfinance, insurance, and union services has increased SEWA's membership and helped it raise the incomes of its members. SEWA plans to expand health benefits and add a pension component.

Source: Lund and Srinivas 1999.

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5.115 *Cash transfers.* Cash transfers constitute another policy instrument for protecting the poor. We have already mentioned social assistance payments for the elderly. In countries with large informal sectors, where formal unemployment insurance is not feasible, means-tested social assistance is a way to assist the unemployed and underemployed. Other cash transfer programs include child allowances, targeted human development programs, and fee waivers for basic services.

5.116 Cash transfer programs typically have multiple objectives (poverty reduction, education and health promotion). Their role in a social risk management strategy depends on a country's income level. In high-income countries, cash transfers are part of social insurance, offering a broad guarantee of minimum income. In the developing world, nonpension cash transfers are rare (except in the transition economies, where family allowances represented 0.4-5.1 percent of GDP in 1992-93). Cash social assistance programs operate in a few Asian countries, where they account for less than 1 percent of GDP; social assistance cash transfers are negligible in Latin America and Africa. Crosscountry experience suggests that family assistance and targeted social assistance are effective for reducing poverty in the short term, especially in countries where there is relatively little poverty. The difficulty is finding an appropriate targeting mechanism that is compatible with the country's administrative capacity. Decentralized solutions tend to be preferable, under the assumption that communities have better information on who is needy (box 5.2)<sup>152</sup>

5.117 Targeted human development programs transfer income in-cash or in-kind to poor households with children based on observable criteria such as children's age and their attendance in school or participation in a health care program. They serve thus the dual objective of poverty reduction and human development. If effective, they are able to avoid the long-term damaging effects on children when households are unable to manage risk

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<sup>151</sup> Morduch 1999.

<sup>152</sup> Subbarao and others 1997.

sufficiently and reduce nutrition to children or pull them out of school to work in response to shocks. Evaluations of the Bangladesh Food-for-Education program found that the transfer of 100 kilograms of rice increased the probability of boys' schooling by 17 percent and that of girls by 160 percent.<sup>153</sup> The Brazilian Bolsa Escola program targets scholarships at regions and communities with high levels of child labor. The objective is to keep the children in school by compensating parents for the lost income earned by children. Preliminary evaluation suggests that there have been significant improvements in school attendance. The Mexican PROGRESA scheme provided health and education benefits for 1.9 million households in 1998, three-quarters of which were in the bottom quintile of the income distribution<sup>154</sup> (box 5.7).

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**Box 5.7 Targeted human development programs: Mexico's PROGRESA**

PROGRESA is an integrated approach to poverty reduction, initiated in 1997. One year later, it already reached about 1 in 10 Mexican households in 41,000 localities and 30 states.

The educational component provides transfers to families with 1 to 3 children ages 8-18 enrolled in school. The amount of the grant is meant to be equivalent to the average productivity of rural child labor, and increases as children reach higher levels of education. This can be a significant source of household income: the grant for a child in the third year of secondary school equals 46 percent of the average earnings of an agricultural worker. Evaluations of PROGRESA found that the program increased enrollment in grades 3-6 by 2.2 percentage points and enrollment in grades 7-9 by 4.9 percentage points. The health and nutrition components target poor families who made regular visits to health care centers, where they receive cash transfers, free health care and nutritional supplements.

Targeting is undertaken at two levels. Beneficiary localities are selected on the basis of a "marginality index." A list of eligible households within these communities is then made based on income-related criteria. This list is then reviewed after receiving community feedback. Two recent studies have evaluated the effectiveness of this approach (Schultz 1999; Skoufias, Davis and Behrman 1999). They found that the geographic mechanism worked well and that the program was effective in identifying extremely poor households. Moderately poor households however tended to be excluded and PROGRESA has recently adjusted its classification method.

Source: Inter-American Development Bank, 1999.

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*The special vulnerability of children*

5.118 We would like to end this chapter with a reminder of the special vulnerability of children in the aftermath of a crisis or shock. In developing countries around the world, children have been pulled out of school and their health care and nutrition allowed to deteriorate jeopardizing their long-term development. The crisis in Indonesia reduced primary school enrollment of boys from the poorer areas in Jakarta by 8.3 percent. There were country-wide drops in junior secondary school enrollment, but these were especially large in the poorer areas, indicating that it is poorer teenagers in urban areas who bore the educational brunt of the economic crisis.<sup>155</sup> Interventions to help households manage risk better will help prevent these undesirable coping responses. But more is needed. Actions can be taken to help children directly. Education and health care fees can be waived for the poor during crises. In 1998, the Indonesian government took several steps to that effect. Entrance fees for public schools were abolished and monthly fees and exam fees were lowered at the primary level. This provided relief for many parents who had fallen behind on

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<sup>153</sup> World Bank 1999c.

<sup>154</sup> Inter-American Development Bank 1999.

<sup>155</sup> Filmer and others 1998.

fee payments as a result of the crisis. An individual scholarship program and block grants to schools targeted to poorer areas aim to restore school enrollment rates.<sup>156</sup> If successful, such measures can avoid irreversible losses in human capital accumulation. Protecting children from the effects of economic crisis, natural calamity, or other shocks, should indeed be a first priority of risk management strategies.

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<sup>156</sup> Filmer and others 1998.

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