Chapter 15
Rural Poverty

Louise Cord

15.1 Introduction: Rural Poverty and the Importance of Pro-Poor Growth ................................................ 67
15.2 Integrating Rural Poverty Issues into the PRSP Process .............................................................................. 69
  15.2.1 Rural poverty diagnosis ......................................................................................................................... 70
  15.2.2 Monitoring progress in rural poverty reduction ..................................................................................... 74
  15.2.3 Tailoring participation for rural populations .......................................................................................... 75
15.3 Priority Public Actions for Rural Space ........................................................................................................ 77
  15.3.1 Human assets: improving rural health and education outcomes .............................................................. 77
  15.3.2 Physical assets: rural infrastructure services for poor people and businesses ........................................ 81
  15.3.3 Natural assets: increasing access to land and tenure security for the rural poor ................................... 84
  15.3.4 Natural assets: irrigation development and poverty reduction ............................................................... 89
  15.3.5 Financial assets: rural microfinance – when is it appropriate and what are the options? ...................... 92
  15.3.6 Financial assets: maximizing poverty reduction from sustainable livestock development ................ 98
  15.3.7 Knowledge assets: investments in agricultural research and extension ............................................. 101
  15.3.8 Social assets: social capital for rural poverty reduction ................................................................. 104
  15.3.9 Risk management in rural areas ........................................................................................................... 108
Notes .............................................................................................................................................................................. 112

Bibliography and References ........................................................................................................................................... 115

Tables
15.1. Difference between Rural and Urban Poverty .............................................................................................. 67
15.2. Locationally Disaggregated Poverty Incidence in Brazil .................................................................................. 71
15.3. Nepal, Access to Basic Infrastructure, 1995/96 ............................................................................................ 72

Figures
15.1. Risk of a Poor Child Dying before Age Five in Urban and Rural Families ..................................................... 78
15.2. Rural-Urban Differences in Educational Attainment by Gender ................................................................. 80

Boxes
15.1. Initial Conditions and the Impact of Growth on Rural Poverty Reduction ...................................................... 68
15.2. Poverty Linkages of Rural Infrastructure Investments .................................................................................... 82
15.3. Roles of Central Ministries and Private Sector in Rural Infrastructure Provision ........................................ 84
15.4. Group Ownership of Land .......................................................................................................................... 86
15.5. Water Supply Subsidies for the Urban Poor in Santiago ................................................................................ 91
15.6. Accessing Groundwater for the Poor .......................................................................................................... 93
15.7. Principles for Successful Microcredit ........................................................................................................... 95
15.8. Income Generation for Vulnerable Groups Development ........................................................................... 97
15.9. Microeconomic Grant Guidelines .............................................................................................................. 98
15.10. Diagnosis of Livestock Production Systems for Pro-Poor Strategies ....................................................... 99
15.11. Evaluating the Farm Sector and Effectiveness of R&E Investments .......................................................... 103
15.12. Farmer-Run Research: Experience with the CIALs .................................................................................. 105
15.13. Key Questions to Assess Impact of Investments on Social Capital ............................................................ 106
15.14. Trade and Price Policies to Support the Agricultural Sector ...................................................................... 109
15.15. Mexico’s PROGRESA and South Africa’s Pension Program ...................................................................... 110
15.16. When Cash Transfer Programs Replace Subsidies ..................................................................................... 111
Technical Notes (see Annex L, p. 475)

L.1 Impact and Illustrative Indicators for Monitoring Rural Poverty and Hunger ............................................. 476
L.2 Policy Mechanisms for Improving Water Use Efficiency: Do the Poor Benefit? ......................................... 482
L.3 Assessing and Monitoring Rural Financial Markets ........................................................................ 483
L.4 Assessing Social Capital .................................................................................................................. 485

This chapter was prepared by: Louise Cord with inputs from Harold Alderman, Jock Anderson, Christopher Scott, Nwanze Okidegbue, Janet Owens, Kees Van de Meer (integrating rural poverty into the PRSP process); Mona Sur (health and education); Christina Malmberg-Calvo and Andrea Ryan (rural infrastructure); Klaus Deininger (land); David Groenfeld, Ariel Dinar, Safwat Abdel-Dayem, Itaru Minami, Geert Diemer, Fernando Gonzalez (irrigation); Louise Cord, Stephanie Charitonenko, Douglas Pearce, and William Steel (rural microfinance); Cornelis de Haan (livestock); Derek Byerlee and Gary Alex (research and extension); Veronica Nyhan-Jones (social capital); Louise Cord, Harold Alderman and Jock Anderson (risk management); Janet Owens (monitoring and evaluation); Patti Petesch (rural participation).
15.1 Introduction: Rural Poverty and the Importance of Pro-Poor Growth

The argument for developing and implementing strategies to reduce rural poverty is compelling. Approximately 75 percent of the world’s poor reside in rural areas, and at current trends the global percentage of poor in rural areas will not fall below 50 percent before 2035 (Ravallion 2000, Alderman 2000). Moreover, in most developing countries the likelihood of being poor and the severity of poverty are greater in rural than in urban areas. For example, the incidence of rural poverty reported in many of the first PRSPs was between 10 and 40 percentage points greater than in urban areas (table 15.1).

These high poverty rates reflect, to a large extent, the significant and well-known challenges facing the rural population. These challenges stem from five broad characteristics of rural space:

- A strong reliance on the natural resource base to sustain livelihoods, which has led to: (1) a high risk environment for households, given their vulnerability to climatic fluctuations, plant and animal disease, price fluctuations, and macroeconomic policy shifts (for example, devaluation, interest rates, and so forth); (2) seasonal incomes and food supply; (3) heterogeneous agricultural production and investment strategies; and (4) limited growth opportunities, given the low and relatively inelastic demand for food products as national incomes rise.

- A low population density and geographic constraints, which have led to high transaction costs and reduced access to physical and social infrastructure.

- An informal economy, which makes it more difficult for policy makers to influence local labor markets and to provide targeted social protection or other support based on income criteria.

- Cultural and linguistic differences, which have often led to limited voice in national and even local decision making processes, especially in remote areas.

- An important role for women in the economy that is often not recognized in rural income generating programs or in women’s access to social services.

To overcome these challenges and address the pressing problems of rural poverty, strategies focused on pro-poor growth of the rural sector must be devised and implemented. Both rural and urban poverty reduction can be accelerated by the growth of the rural sector, especially agriculture. For example, in India poverty has been reduced more by rural economic growth than by urban growth (Ravallion and Datt 1996). Agricultural growth directly benefits agricultural households by raising incomes and food security. It also indirectly benefits urban and rural households by: (1) promoting higher wages; (2) lowering food prices; (3) increasing the demand for consumer and intermediate goods and services; (4) encouraging the development of agribusiness, (5) raising the returns to labor and capital; and, (6) improving the overall allocative efficiency of factor markets.1

The non-farm rural economy also provides important direct and indirect benefits to rural households, mainly by providing entrepreneurial or wage income, by lowering the cost of locally produced goods and services, and by raising the demand for food products. Non-farm activities can also reduce income disparity in areas where land distribution is highly skewed (Adams 2001).

Table 15.1. Difference between Rural and Urban Poverty

<table>
<thead>
<tr>
<th>Percentage points difference between the incidence of rural and urban poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burkina-Faso</td>
</tr>
<tr>
<td>Mauritania</td>
</tr>
<tr>
<td>Mozambique</td>
</tr>
<tr>
<td>Tanzania</td>
</tr>
<tr>
<td>Bolivia</td>
</tr>
<tr>
<td>Honduras</td>
</tr>
<tr>
<td>Nicaragua</td>
</tr>
</tbody>
</table>

Source: PRSP documents for the countries mentioned above.
Box 15.1. Initial Conditions and the Impact of Growth on Rural Poverty Reduction

The distribution of assets, access to social and physical goods and services, as well as other geographic and household factors affect the impact of growth on rural poverty. In the farm household sector of rural China, consumption growth rates were larger in counties with higher initial average physical and financial wealth (Ravallion and Jalan 1999). Similarly, Timmer (1997) finds that in countries where the distribution of income is relatively equal, the poor will benefit from agricultural investments, but when distribution is skewed toward the wealthy, the poor are less likely to benefit. Deininger and Squire (1998) also emphasize that access to land assets is critical to benefiting from agricultural development and that an initial land distribution skewed toward the wealthy will weaken the connection between sectoral growth and poverty reduction.

Initial conditions also affect the relationship between growth of non-farm earnings and rural poverty reduction. Lanjouw and Lanjouw (2001) discuss how wealthier households may have access to physical and human capital that enables them to engage in relatively more productive activities than poor households. In India, Ravallion and Datt (1999) find that non-farm economic growth was less effective in reducing poverty in states with “poor” initial conditions in terms of rural development and human resources. Low farm productivity, low rural living standards relative to urban areas and poor basic education can inhibit the prospects of the poor participating in growth of the non-farm sector. (Ravallion 2000).

The impact of growth on poverty reduction varies both by nation and across regions and households within countries. Research indicates that the impact of rural sector growth (both from the farm and non-farm sectors) on poverty reduction depends upon initial conditions, such as the distribution of assets, access to social and physical goods and services, and geographic factors (box 15.1). Consequently, growth alone is not sufficient to successfully attack the high rates of rural poverty; strategies that redress the weak initial conditions facing many poor households are critical. Research suggests that raising agricultural productivity, especially for smallholders, and expanding infrastructure and social spending in poor rural areas, can help to overcome weak initial conditions and improve the likelihood of pro-poor growth (Ravallion and Datt 2002). Thus, designing interventions to promote pro-poor growth in rural areas means providing opportunities for the rural poor to increase not only their ownership of assets but also the productivity of assets already owned.

This chapter aims to assist national PRSP teams and Bank staff in using the PRSP process to more effectively address rural poverty and develop pro-poor rural growth strategies. It provides an overview of how to better integrate rural issues into the poverty diagnosis, participatory processes and monitoring strategy, and then examines how to increase the rural impact of government interventions. It concentrates on those policies designed to increase the ownership by the rural poor of key assets and/or the productivity of those assets they already own. As such, the chapter adopts a holistic, cross-sectoral approach to rural poverty reduction taking into account the particular constraints facing rural areas. It builds on the organizing framework of the “sustainable livelihoods” approach and covers human, physical, natural, financial, knowledge and social capital assets, as well as options for risk management.

Key messages for rural poverty reduction strategies include the following:

- **Rural poverty issues need to be integrated into all four parts of the PRSP process.** Most poverty reduction strategies identify rural development as a priority sector and identify many interventions for rural development. However, the impact of poverty reduction strategies can be improved through the inclusion of: (1) a rural participation strategy to ensure that rural stakeholders are involved fully in the design, implementation and monitoring of the strategy; (2) a diagnosis that not only assesses the rural poverty profile, correlates of poverty (including income sources and access to assets and markets) and key determinants of rural poverty, but also evaluates the overall performance and incentive framework of the rural sector and its impact on the poor; and (3) spatially differentiated poverty impact and intermediate monitoring indicators that help focus policy makers and national actors on rural poverty reduction.

- **Incidence of benefits and the importance of sequencing.** Investments in natural (land tenure and water), financial (credit and livestock) and knowledge assets (research and extension) have direct and indirect benefits, which are not evenly distributed. The most important direct benefits of public investment tend to be in increased land and livestock productivity, while the indirect benefits are transmitted mainly through labor and food markets. The extent to which the poor receive the direct and indirect benefits depends upon their participation in rural markets, the level of physical
and human assets, and access to complementary assets (for example, research and extension with credit). A key priority is to ensure a minimum level of human and physical assets for the rural poor, which is necessary to access the economic information, markets and services to allow producers to fully benefit from public investments.

- **Packaging.** Not only is a minimal level of social and physical infrastructure required to enable people to benefit from investments, but the packaging of such investments is also important. For example, improved access to land or irrigation needs to be combined with improved access to knowledge (research and extension, market information) and financial services. However, given the diversity of service providers and financing sources for productivity enhancing investments, it often is difficult to ensure the delivery of a comprehensive package to smallholders.

- **Interventions in the rural sector need to recognize and capitalize upon women as key economic actors, and not only as a “vulnerable and excluded group.”** Interventions need to take into account the economic role played by rural women and focus not only on improving social well-being and reducing risk, but also on fostering broad-based rural growth and enhancing the access to and management of natural, financial and knowledge assets by women.

- **Participation.** A participatory approach can be pursued through various means, such as conflict resolution mechanisms for common land management, water users associations, parent-teacher organizations, beneficiary surveys for health, community involvement in infrastructure development, and participatory development of research and extension services.

- **Growing demands on a fragile private sector.** Following the structural reforms enacted during the past two decades, the private sector’s role has grown. The private sector is expected not only to provide farm and non-farm income generating activities, but also to play a direct role in the financing and delivery of some public goods and services in rural areas. At the same time, in poor regions, the incentives and capacity for private sector involvement are most limited. Options such as market-based business development services and regulatory frameworks that promote private sector involvement (for example, intellectual property rights for seed development, warehousing receipts and their use as collateral, and prudent supervision standards adjusted for microfinance institutions) could need further exploration.

- **Institutions for broad-based rural development.** The success of development initiatives, particularly those targeted in support of the rural poor, depends upon the existence of well-functioning institutions, able to collaborate across regional and functional boundaries and responsive to the people they are meant to serve. Yet poverty reduction strategies rarely analyze institutional capacity or discuss the institutional framework for priority public actions. The priority areas for action discussed below consistently highlight the importance of strengthening institutional capacity, whether it be public (land registries, extension providers), private (microfinance institutions, extension providers), or civil society based (water users, producer associations).

### 15.2 Integrating Rural Poverty Issues into the PRSP Process

Most poverty reduction strategies advocate rural development as a priority sector and identify many interventions for rural development. However, attention on rural issues is more limited in the poverty diagnosis, the monitoring framework, and the participation strategy. As a result, the priority public actions tend not to be systematically linked to poverty reduction and the monitoring activities are not always consistent with the priority actions proposed (Cord and Verissimo 2001). While poverty diagnosis, monitoring and evaluation, and participation are covered in depth in volume 1 of the Sourcebook, this section highlights some options to better integrate rural poverty issues into these aspects of the PRSP process.
15.2.1 Rural poverty diagnosis

A good poverty diagnosis is a key building block for a poverty reduction strategy. The main ingredients include:

- A poverty profile that: (1) identifies the rural poor (based on income and non-income indicators), (2) analyzes the severity of rural poverty, and (3) assesses the degree of income and asset (particularly land) inequality. If possible, the evolution of these indicators over time will also be discussed.

- An analysis of the main correlates of rural poverty, that is, the key factors associated with a higher incidence of poverty (such as asset levels, market participation, sources of income, and geographic factors).

- An analysis of the most important determinants of rural poverty, if possible identified through regression analysis and qualitative techniques.

- A sectoral analysis that, inter alia, evaluates the impact of past programs on poverty and the distribution of income and assets.

This section complements the various methodologies and technical options for analyzing poverty and inequality are presented in chapters 1, 2, and 7. This section complements those chapters by highlighting some specific issues to be covered in a rural poverty analysis.

Poverty profile – who are the rural poor?

Generally, PRSPs present the urban and rural poverty rates; however, less frequently is the poverty rate further broken down to reflect the heterogeneous nature of rural space. To understand who are the rural poor and what are the key correlates of rural poverty, it is important to differentiate the rural poverty rate by region (preferably agro-climatic as well as administrative), degree of remoteness, ethnicity, asset levels (particularly land ownership), and by principal source of income (cash crop farmers vs. food crop farmers). Given the particular constraints faced by female-headed households in urban and rural areas, spatially disaggregated poverty levels should distinguish by gender of household head. The importance of disaggregating rural poverty data is highlighted in the example of Brazil, which illustrates significant differences between urban and rural poverty, regional differences in rural poverty, and stark differences in the rural poverty rate depending on the region’s proximity to urban areas (table 15.2).

Correlates of rural poverty – what are the variables associated with rural poverty?

The analysis of the correlates of poverty assesses a household’s likelihood of being poor if it has certain characteristics. Generally, this type of analysis examines the impact on the poverty rate of education and health outcomes (or services) as well as infrastructure access and regional characteristics. In addition to these variables, it is important in a rural context to assess the impact of income sources, asset holdings (in particular land and social capital), market participation rates, and the risks or the likelihood of households being poor.

Income sources

Rarely do poverty assessments present detailed information on sources of income. Data on household income are not systematically collected or presented in part because expenditure data is considered more reliable for calculating the poverty line (see chapter 1). Rural households engage in a variety of income-generating activities that span the agricultural and non-farm sectors (among them livestock, forestry, cash crops, food crops, fisheries, agricultural trading, non-farm employment and/or non-farm microeconomic enterprises). The package of economic activities in which the rural poor are engaged serves not only to
increase their income, but also to diversify their earnings and manage potential risks. Analyzing the sources of income of the rural poor is important to:

- understand the impact of policy changes (for example, price liberalization) and exogenous shocks (for example, price shocks, climatic shocks, economic downturns) on the rural poor;
- identify income generating strategies used by the rural non-poor; and
- target interventions to the poor (such as providing technical advice to growers of certain crops in regions with the highest poverty rates).

**Assets**

In general, poverty analysis investigates health and education outcomes for the poor and non-poor along with their access to basic health and education services and physical infrastructure (electricity, roads, potable water, communications networks). However, this information is not always disaggregated for rural and urban areas, despite those areas’ very different levels of access to human and physical infrastructure. Further, poverty assessments rarely look beyond access to human and physical infrastructure to other elements that affect rural livelihoods and the probability of being poor.

These elements include access to assets that are particularly important for agricultural production and marketing:

- **Land use and ownership patterns**, including information on type of land (pasture, forestry, crop), quality of land (irrigated or rainfed), cropping patterns, land tenure arrangements (title, customary, communal shared), and farm size. The incidence and impact of rural investments on the rural poor depends to a large degree on the farm structure and the distribution of land.
- **Housing assets**, which are particularly vulnerable to the impact of climatic shocks, such as in Central America after Hurricane Mitch. Housing assets are also critical to the urban and rural poor in the colder climates of eastern Europe and central Asia.
- **Livestock ownership** (categorized by species), which is important not only for income generation (particularly for pastoral societies), but also as a savings option and a mechanism for risk management. Often rural households will sell off their livestock when faced with a shortfall in income.
- **Access to technical assistance and market information** that enables the rural poor to raise productivity and market revenue.
- **Social capital assets** (for example, participation in community and national organizations), which have been linked to expanded access to other assets for economic development and improved risk management. For example, producer organizations and community organizations can be critical to agricultural marketing.
### Table 15.3. Nepal, Access to Basic Infrastructure, 1995/96

<table>
<thead>
<tr>
<th>Percentage of households having access to:</th>
<th>All Nepal</th>
<th>Urban Areas</th>
<th>Rural Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piped water indoors</td>
<td>8</td>
<td>46</td>
<td>5</td>
</tr>
<tr>
<td>Piped water indoors + wells</td>
<td>54</td>
<td>86</td>
<td>52</td>
</tr>
<tr>
<td>Toilets</td>
<td>22</td>
<td>67</td>
<td>18</td>
</tr>
<tr>
<td>Sanitary system</td>
<td>9</td>
<td>52</td>
<td>6</td>
</tr>
<tr>
<td>Garbage disposal</td>
<td>2</td>
<td>20</td>
<td>0.4</td>
</tr>
<tr>
<td>Electricity</td>
<td>14</td>
<td>80</td>
<td>9</td>
</tr>
<tr>
<td>Telephones</td>
<td>1</td>
<td>12</td>
<td>0.2</td>
</tr>
<tr>
<td>Paved road within 30 minutes</td>
<td>23</td>
<td>95</td>
<td>18</td>
</tr>
</tbody>
</table>


### Market participation

It is also important to analyze household participation (both selling and buying) in rural financial, land, product and input markets. If possible, the data should cover the prices, quantity and timing of the transactions as well as the transaction costs, intermediary fees, and transport costs. Factoring in this information is important to assess:

- the impact of price fluctuations and policy changes on household income (for instance, to assess the distributive impact of the removal of fertilizer subsidies);
- key constraints on market participation and optimization of the return on market transactions;
- impediments to improving farm income and productivity; and
- the extent to which rural markets are accessible and are used by the rural population. Shallow markets often have more market distortions and higher transaction costs and tend to be less useful in risk management.

### Vulnerability to risk

In light of the significant risks facing rural households, it is important to measure rural households’ degree of exposure to negative income shocks which may push them deeper into poverty in the future (Sarris 2001). Households that are vulnerable to risks and income shocks may lower investments in productive assets, as they seek to hold more liquid reserves, and may diversify their income sources, perhaps at the cost of lower returns. Analysis should cover three phases:

- **Identification of the type and frequency of the shocks affecting rural households.** The objective is to seek to diminish the frequency and/or magnitude of the risks (for example, through veterinary vaccinations for cattle diseases), to help mitigate the impact of the risk on households (for example, by providing improved rural veterinary services), or to help rural households cope with risks (for example, by making microfinance services available) after these occur.

- **Measurement of the impact of income and other shocks on rural households and how this impact varies in light of household and community characteristics.** Chapter 1, section 1.4 and the associated technical note A.11 shows how regression techniques can be used to assess both the impact of risk on households and the importance of household and community variables in mitigating the risk. Changes in asset ownership (for example, livestock), health status or diet also can be studied to analyze the vulnerability of households to risk. Similarly, the analysis may reveal that access to education, informal savings networks, and public services (water, electricity, sanitation) are important in reducing vulnerability.

- **Analysis of the risk-coping strategies of the poor and non-poor, not only to assist households in improving risk management, but also to ensure that the design of development interventions takes these strategies into account.** For example, improved but more labor intensive cultivation techniques have in some cases not been adopted by households because they would have required a reduction in labor market participation, which was a critical component of household income diversification strategies.
Determinants of rural poverty

Regression analysis of household data, preferably combined with qualitative information about how the poor perceive the causes of their poverty, and with rural sectoral analysis, is useful in identifying key determinants of rural poverty. Information on the determinants of rural poverty can be useful in prioritizing public actions of the PRSP and in evaluating the quantitative impact of investments on poverty. For example, in the Brazil rural poverty diagnosis, a key finding was that the returns to farmland were highly dependent on the levels of complementary productive inputs (purchased inputs, machinery) and demographic factors (age of operator, education) (World Bank 2001).

Sectoral analysis

The last ingredient of a good rural poverty diagnosis is an assessment of the impact on poverty of rural sectoral growth, as well as rural development policy and expenditures. This analysis is generally not included in PRSPs or poverty assessments, yet macroeconomic and sectoral policy can have an important effect on rural poverty and the potential for pro-poor growth. Without an understanding of the impact of past policies and expenditures, it is difficult to incorporate lessons learned and improve the effectiveness of development programs.

Rural sector growth

In evaluating rural sectoral growth and its impact on rural poverty, three broad questions can be posed.

- **What has been the absolute and relative performance of the agriculture sector?** What are the aggregate trends, such as agricultural GDP by subsector (that is, the share to forestry, food crops, cash crops, livestock, fisheries, and forestry), export/import trends, yields, production levels of key products and inputs (for example, fertilizer and tractors), and product and input price trends? What are the relative trends, such as agricultural GDP compared with overall GDP and other subsectors, producer price index for agricultural products compared with the CPI, rural wage rates compared with urban wage rates, and regional prices trends? Also, how have these aggregates evolved across regions? Along with the poverty profile, this information is important to identify the sources of growth, and in particular to examine growth in subsectors and regions where the poor are most affected.

- **What are the key engines of agricultural growth** (for example, investments in agricultural technology, infrastructure, and education)? How do these compare with the determinants of rural poverty reduction? Do the poor have access to and utilize these resources? Why or why not?

- **What has been the impact of past growth on the rural poor and non-poor?** What are the elasticities of poverty reduction, both overall and as they vary across regions and households? Have the activities in which the poor are predominantly engaged benefited from growth? Similarly, have the regions where the poor reside benefited from growth?

Policy framework

It is important to establish in advance the effects of the policy framework on growth and rural poverty. Among the elements that merit examination are the incentive framework of agriculture; identification of the winners/losers in government market interventions; the agricultural potential and comparative advantage of smallholders; and the impact of macroeconomic trade and exchange rate policy on various groups of producers. A variety of tools covering partial equilibrium analysis (demand, supply, multi-market, comparative advantage analysis), computable general equilibrium models, and household microeconomic simulations (for example linear programming) are available to assess these areas.

Analysis of the policy framework will include:

- **Regulatory issues.** A review of the regulatory framework can reveal the incentives for: (1) private sector investment in new technology and improved seeds; (2) provision of credit to small land-
holders (use of land as collateral for credit); and (3) deepening of rural product wholesale markets, which enables the use of warehouse receipts as collateral. Analysis of the regulatory framework can also reveal the extent to which there is appropriate and prudent oversight of microfinance institutions and whether women have the legal right to inherit land assets. While most of these issues concern the regulatory framework at the national level, local regulations can also affect market incentives, for example market taxes, limits to entry into agricultural trade, and formal and non-formal restrictions for truck transporters.

- **Institutional issues.** Often public and private institutions are weakest in poor areas: high transactions costs reduce the returns on investments. A frequent problem is the harsh conditions which reduce the attractiveness of rural postings for public and private sector employees. In order to have a better understanding of the key constraints to providing services to the poor, sectoral assessments must evaluate the capacity and responsiveness of national and local public institutions involved in rural development and in particular in assisting the poor. They also should assess the extent to which the private sector is involved in key aspects of delivery, again especially to the poor, of infrastructure services, technology dissemination and development, animal health services, and rural financial services.

**Rural sector expenditures**

Chapter 6, “Public Spending,” outlines a comprehensive approach to the assessment of public expenditures. This section highlights three aspects of public expenditure analysis that are relevant in rural communities.

1. A basic understanding of the nature of such expenditures. This requires examining: recurrent and one-time investment costs; their distribution by category (subsidies, per diem, investment, material); and the specific types of programs that receive funding (such as rural primary education, subsidies for regular visits to rural health clinics, vouchers for technical assistance, maintenance of rural feeder roads).

2. An assessment of who is benefiting from the investments. This will identify the incidence of rural expenditure programs (using household and administrative data), will set up tracking systems to monitor flows to rural areas, and can link the spatial distribution of rural expenditures to regionally disaggregated poverty maps.

3. An assessment of the overall quality of the programs, which generally involves cost-benefit analysis, benefit assessments, qualitative surveys, and the tracking of implementation and impact monitoring indicators.

**Data requirements**

All these types of analyses are data intensive. Most of the data can be found in household surveys (although generally a rural component of the survey is required), government budgets, administrative data, case studies, qualitative surveys, and population and agricultural census data. Recently new techniques have emerged that allow for the linking of census and household data, which can assist in providing detailed spatially disaggregated information on the incidence and correlates of rural poverty (Elbers and others 2001 and 2002). Both qualitative and quantitative data is important for all three aspects of vulnerability analysis. The qualitative data is particularly useful in analyzing the sources of risk, people’s perceptions of their vulnerability and its determinants, and traditional household strategies to reduce their vulnerability and manage risk. Quantitative household data is particularly useful to measure the impact of risk alongside other community and household characteristics that affect vulnerability.

**15.2.2 Monitoring progress in rural poverty reduction**

A sound rural poverty reduction strategy requires a well-conceived plan for monitoring progress toward achieving its objectives. Monitoring both tracks program implementation and measures program impact.
Chapter 15 – Rural Poverty

Chapter 3, “Monitoring and Evaluation,” discusses how to establish a poverty monitoring system, define key indicators, track them over time and see what changes have taken place. The key elements of a rural poverty monitoring system are reviewed below:

- A poverty monitoring system involves the selection of broad-based poverty reduction objectives. **Impact indicators** are used to monitor progress toward these goals; they monitor long-term changes in welfare in a multi-dimensional fashion and are not limited to income, consumption and social indicators (although in practice these are used more frequently).

Generally, poverty reduction strategies base their impact indicators on the Millennium Development Goals (MDGs), which are not disaggregated for rural and urban areas. Yet given the magnitude and severity of rural poverty, as well as the particular challenges of delivering services to rural areas, it is important to identify distinct impact targets for rural and urban areas. Otherwise, it could be easier for governments to meet their poverty targets by focusing on urban areas, where service delivery is less costly, and thereby exclude rural beneficiaries. Discrete impact targets underline the need for specific strategies to deliver social services and meet poverty reduction targets in rural areas.

- Once the poverty reduction indicators and targets are established, a system of intermediate indicators is required to monitor progress toward achieving the poverty impact indicators. These intermediate goals include: (1) **output indicators**, to monitor program achievement (for example, vouchers for technical assistance provided or kilometers of roads rehabilitated); and (2) financial and physical **input indicators**. Intermediate indicators provide the opportunity to make adjustments in the execution and delivery of the overall strategy when monitoring reveals that impacts are weaker than expected.

The indicators are linked, in sequence, from input to output, from output to outcome, and in turn from outcome to impact. The input and output indicators link the budget allocation process to the rural poverty strategy through sectoral program goals. This approach helps to: (1) highlight the linkages between priority public actions and poverty reduction; (2) illustrate the combination of input, output and outcome indicators necessary to achieve a certain poverty target; and (3) reveal cross-sectoral linkages, as some program outcomes depend on the outcomes of other programs (for example, a land titling program that needs to be accompanied by greater access to rural financial institutions and technical assistance services in order to achieve the desired higher investment rates and farm income). Technical note L.1 to this chapter presents some impact and intermediate indicators for rural interventions. The table highlights specific subsectoral indicators and illustrates the linkages between specific interventions and rural poverty outcomes, as well as the linkages across interventions. The table is not meant to be exhaustive, and the proposed indicators will need to be adapted to specific country contexts.

Once the indicators are selected, a system is needed to collect and analyze the data, and provide results to decisionmakers on a timely basis. It is important that the monitoring information specify regional differences in impact and program implementation. A variety of agencies and stakeholders will be involved in collecting and analyzing information on the implementation and impact of rural interventions. The ministries of agriculture, health, education and infrastructure will provide information, as will rural stakeholders, on benefits received and their impact. It is important that the national entity responsible for poverty monitoring provides a comprehensive understanding of progress toward rural poverty reduction and that this information is in turn reported to government, civil society, donors and other actors involved in rural poverty reduction.

### 15.2.3 Tailoring participation for rural populations

As explored in chapter 7, “participation is the process through which stakeholders influence and share control over priority setting, policymaking, resource allocations and access to public goods and services.” Despite the rural sector’s importance to strategies for economic growth and poverty reduction, rural stakeholders often find their interests poorly represented in national policymaking processes, including in many PRSPs.
Challenges for rural participation

Rural areas are often characterized by deep poverty and economic inequities, physical remoteness, heterogeneity, weak organizational capacity and other constraints that make it difficult to fully participate in the PRSP process and the national development dialogue more broadly.

- Although rural populations may be large, they often are dispersed and lack a communications infrastructure, making it difficult to form interest coalitions to shape or even follow national policy debates. Even in less remote rural regions, local and national political processes often provide few arenas for public involvement. Quite frequently in the Voices of the Poor study (Narayan and others 2000a and b), for instance, rural participants exclaimed that politicians made local appearances only during election campaigns and, once in office, rarely visited their communities or addressed policy concerns of importance to local people. “Why should a person ask for taverns and condoms in parliament? He should have been coming here to listen to people’s problems…. Can we eat condoms?” asked a poor villager of Mbwadzulu, Malawi. Nor do villagers have many opportunities to interact with officials from external agencies.

- The heterogeneity of rural societies also poses formidable obstacles to participation. In some regions, there are diverse ethnic, linguistic, religious, caste or cultural groups, which in turn underpin large differences in social, economic and political power. Understanding these power differences, and the forms of exclusion which leave some groups with much less voice and security than others, is vital to tailoring participation mechanisms to ensure the inclusion of often excluded groups.

- The challenges and opportunities available to a poor rural woman are very different from those of either a poor rural man or a poor urban women. Very often it is a deviation from local norms for a woman to speak out in community affairs, much less exercise leadership and represent women’s particular needs and interests effectively (see chapter 10, “Gender”).

- Despite and because of difficult local conditions, rural societies are often rich in associational life. It is to their local community groups, rotating credit clubs, cooperatives, producer groups and the like that poor people find bonds of dignity, respect, and material support in their every day lives and during times of crisis. Yet many of these networks are weak and oriented toward helping their members survive, rather than connecting them with other similar groups and actively seeking to forward their particular interests in political arenas or the marketplace.

- At times, rigid hierarchies and deep-rooted patron-client relationships in rural societies leave poor people with very few channels for voicing their interests and create tremendous risks should they take stands that run counter to local political and economic elites.

Options for strengthening rural participation

Together these conditions raise important challenges to participation and call for special planning to ensure the meaningful representation of poor rural men and women in PRSP processes. Options for strengthening the participation of key rural actors in the PRSP process include:

- Measures for capturing and communicating women’s perspectives in such a way that they can inform and influence policy processes.

- Support of processes that help rural groups to form broader alliances as a means to getting diverse rural interests heard and acted upon. Investments in expert community facilitators often have been an effective means to help mobilize poor rural populations around shared problems/needs and strengthen local capacity to link with and receive external support or influence policy processes. These and other empowerment strategies seek to expand the assets and capabilities of poor men and women to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives.

To date, most PRSP processes have focused on programming public consultations to inform the initial design of poverty strategies, typically at the regional level. Much more systematic efforts will be
needed for policymakers and the wider community engaged in PRSP processes to learn about and improve policies and programs that respond to the particular realities and needs of rural areas. The challenge to achieve effective rural participation in PRSP processes does not rest solely on developing channels through which poor and vulnerable groups may participate. Participation strategies must also build the capacity of the various public, private and civic institutions that interact with rural people. These groups need to be able to grasp local needs and realities, and to devise effective policy and institutional responses to what may often be quite context-specific realities and needs.

### 15.3 Priority Public Actions for Rural Space

This section reviews ten areas of priority public actions for rural development. They are organized around the six core assets groupings based on the sustainable livelihood framework (human, physical, natural, financial and knowledge assets and social capital) as well as the cross-cutting theme of risk management.

#### 15.3.1 Human assets: improving rural health and education outcomes

Ill health and low educational attainment are important dimensions of rural poverty. Chapters 18-19 provide detailed accounts of diagnosing health and educational outcomes of the poor, devising strategies and policies to improve health and education, and prioritizing among alternatives. However, particular initiatives may be needed to build human assets in rural areas, as there are specific household, community, and institutional issues in rural areas that limit both the demand for and supply of social services. These special interventions include not only increasing the physical and financial accessibility of health and education services and inputs, as well as their overall quality and appropriateness for rural areas, but also complementary investments in drinking water, sanitation facilities, rural areas and housing.

This section complements chapters 18-19; it examines the particular set of constraints to improving health and education outcomes in rural areas and the various policy options available to help overcome these constraints.

**Rural health**

Among the poor, health outcomes of rural residents may be considerably worse than those of urban populations. For example, in eight of ten countries studied, a rural child in a family with a dollar a day per capita expenditure has a higher chance of dying before its fifth birthday than an urban child with the same household expenditures (figure 15.1). Poor health outcomes may in part be explained by numerous household, community, environmental and institutional factors that aggravate health conditions in rural areas and limit both the demand for and supply of health services. These factors include household influences, community and environmental influences, and health system influences.

**Household influences on health outcomes**

The dependence of rural households on agriculture creates volatility in consumption and income levels and in the quality of consumption, which may affect health outcomes (particularly nutrition) and constrain the demand for health services. Housing conditions may also aggravate health outcomes in rural areas. Dirt floors contribute to long-term recurrent exposure to intestinal worms that penetrate feet, particularly in areas with poor sanitation, and poor ventilation increases the threat of indoor air pollution. Rural housing building materials may also provide breeding grounds for certain disease vectors.

Rural residents may have less access to health and nutritional knowledge, thereby restricting their ability to effectively evaluate health risks and/or adopt practices that promote good health and nutrition. In particular, the use of biomass fuels such as charcoal, twigs, leaves and dung for cooking, heating and lighting in rural households is a cause of indoor air pollution that increases the risk of respiratory illnesses. Moreover, exposure to pesticides contributes to the disease burden among rural households engaged in farming. Farmers and their families are susceptible to deleterious health outcomes from pesticide use,
especially when it is excessive, when farmers do not have adequate application equipment and protective gear, or when farmers are ignorant about the hazards of pesticide use and lack proper training (Listorti and Doumani 2001).

Community and environmental influences on health outcomes

The lack of adequate and safe water and poor sanitation facilities contributes to the threat of water borne and water related diseases in rural areas. Even physical accessibility of health services may be a challenge unique to remote rural areas in many countries. When roads exist, access may be limited at certain times of the year due to the poor condition of roads—for instance, during the rainy season when infectious diseases such as malaria are more prevalent.

Several vector related diseases, including malaria and schistosomiasis, predominate in rural environments. The presence of large bodies of surface water (irrigation canals, dams, rice paddies, and so forth) and poor water management provide ideal vector breeding conditions in rural areas. The proximity of rural households to agricultural fields and bodies of surface water increases their susceptibility to malaria. In Ethiopia, a recent study found that a sample of children under 10 years of age living within 3 kilometers of small dams experienced a sevenfold increase in malaria compared with children living outside mosquito flight ranges (Listorti and Doumani 2001).

Health system influences on health outcomes

Monetary costs associated with user fees and purchasing prescription drugs constrain the demand for health services among the rural poor. Similarly, the high transaction costs (mainly related to time) for accessing health services may depress demand, especially during peak agricultural seasons.

Even if health services are physically accessible they may be of low quality and, hence, may be underutilized. Rural facilities may have difficulty attracting staff and may often fail to have essential drugs available for patients. Problems may also arise because staff do not understand local languages or
dialects. The way in which health services are organized influences whether patients utilize the services. The lack of female health providers may suppress the demand for health services by rural households.

Inequities in government health budgets that favor urban residents or the wealthy may be responsible for the lack or poor quality of health services in rural areas. As governments decentralize, the way in which national resources are allocated affects health outcomes. The extent to which national resource allocations take account of the poverty and disease burden of different geographic areas will be a factor in determining whether decentralization arrangements lead to improved health outcomes among the rural poor.

**Policies for rural health**

Improving health outcomes of the rural poor requires interventions from within and beyond the health sector to, for example, improve housing conditions and access to potable water. Chapter 18 contains a broad discussion of options to improve health outcomes; the following section amplifies that discussion with a review of a few actions that may improve health and nutritional outcomes of the rural poor.

**At the household, environmental and community level**

- Better ventilation, use of less-polluting sources of fuel for cooking such as butane gas, lighting and heating, and energy efficient cooking stoves could help reduce the threat of indoor air pollution.

- Improved household access to adequate quantities of safe drinking water and proper sanitation facilities.

- In the case of specific diseases such as malaria, controlling the breeding environment of vectors, minimizing contact with vectors (for example, promoting the use of insecticide-treated bed nets), enabling residents to obtain timely and effective care and treatment and the use of prophylaxis, where appropriate, can reduce the disease burden in rural areas.

**Interventions to stimulate the demand for and supply of health services**

- Community nutrition projects such as Benin’s Projet d’intervention locale pour la Sécurité Alimentaire (PILSA), Madagascar’s Community Nutrition Project (SECALINE) and the Senegal Community Nutrition Project (SCNP)—all of which utilize NGOs for community mobilization and service delivery—have been successful in improving the health and nutritional outcomes of rural women and children.\(^{11}\)

- Rural safety net programs provide cash transfers to families (and to women in particular) in exchange for regular visits to health posts, as in the case of PROGRESA in Mexico—although experience reveals that such programs are costly and depend on the existence of health, education and road infrastructure (Cord 2001).

- Construction of additional health posts and health centers in rural areas that provide preventive and basic curative services, outreach activities to remote areas, and collaboration with NGO and private partners to extend health services to rural areas may address problems associated with physical accessibility to health services.

- Ensure that government funds are equitably distributed geographically—perhaps using regional per capita expenditure and poverty indicators to set local spending targets.

- Provide hardship pay and other incentives to encourage trained health care providers, including doctors, nurses and midwives, to serve in rural areas.

**Rural education**

In many countries, education outcomes of rural residents, and particularly of the rural poor, continue to lag behind achievements in urban settings. In some countries, such as India, in addition to large gaps in educational attainment between urban and rural residents, there are gender differentials that are
particularly pronounced in rural areas, and particularly among the poor. In other countries, such as Colombia, rural residents may have less access to education but gender differences are less pronounced (figure 15.2).

**Factors affecting rural education outcomes**

As with health, in rural areas there are some unique demand and supply side factors that affect education outcomes.ü

**Factors contributing to low demand for education**

*Physical accessibility.* Opportunities for continuing education beyond the primary level are limited, as many rural communities cannot operate secondary schools efficiently and require children to travel long distances (on sometimes seasonally impassible roads) for secondary schooling.

*Affordability.* The lack of resources to pay fees or purchase uniforms and books makes it difficult to send children to school. The volatility of rural incomes and the inability of poor households to smooth incomes may result in children being withdrawn from schools in the aftermath of an income shock. In some cases, parents are deterred from sending their children to school because of the high cost of attending school. This is especially the case when school calendars are rigid and not compatible with the agricultural cycle.

*Quality.* Low opinions of the value of education (which in part may reflect the few opportunities to exploit secondary education in rural areas) may deter parents from sending their children to school. The perceived value of rural education is also undermined by the fact that the curriculum may not be relevant to rural communities or that rural schools often lack adequate instructional materials. Furthermore, the use of non-local languages as the medium of instruction may affect learning abilities and parental incentives to send children to school.

**Factors contributing to inadequate supply of education services**

- Low population density increases the cost per student of providing education services in rural areas.
- In many rural areas it is difficult to attract qualified teachers, particularly female teachers.

**Figure 15.2. Rural-Urban Differences in Educational Attainment by Gender**

![Graphs showing rural-urban differences in educational attainment by gender for India 1992-93 and Colombia 1995](http://www.worldbank.org/research/projects/edattain/edattain.htm)
Poor rural infrastructure may make it difficult to get building materials, furniture, equipment, and textbooks to remote rural schools.

In many countries, while primary schools may be accessible to children, many of the schools may not have a complete range of grades required to complete primary school.

It is also common to find that public expenditures for primary and secondary education are biased toward urban areas.

**Policy options for rural education**

Depending on the factors identified as being the key constraints to improving educational outcomes, there are numerous policy instruments and strategies that can help address these challenges. Policy options that may be particularly relevant in improving rural educational outcomes may include:

**Stimulating demand**
- Adopt a flexible calendar that is compatible with the agricultural cycle so that children are not withdrawn from schools when labor demands on the farm are high.
- Eliminate fees for primary education.
- Use local languages as the medium of instruction.
- Provide special incentives for parents to send girls to school if cultural factors discourage girls’ education. Improving sanitation facilities (toilets) in rural schools has proven to be important for encouraging girls’ education.
- Contract with NGOs or private providers to extend schooling to communities in very remote and inaccessible areas.
- Promote distance learning.
- Encourage community participation in schools and greater school autonomy.

**Expanding supply**
- Use locally recruited teachers.
- Strengthen support networks for teachers through the development of school clusters and in-service training.
- Offer financial incentives to encourage teachers to serve in rural areas.
- Promote the use of multi-grade schools to ease supply constraints.

**15.3.2 Physical assets: rural infrastructure services for poor people and businesses**

**Physical assets for rural poverty reduction**

Providing reliable and affordable access to rural infrastructure services dramatically increases rural people’s access to markets and social services and is essential for rural growth and poverty reduction (Ahmed and Donovan 1992; World Bank 1994) (box 15.2). Key issues related to the provision of energy, transport, water and sanitation, and information and communication technology to rural people and businesses are discussed in chapters 20-24. This section focuses on three themes that cut across these infrastructure subsectors and are particularly relevant to the goal of universal access in the rural context. These themes are sustainability, replicability and poverty reduction.

- **Sustainability—how to ensure assets and services will be operated and maintained.** Rural infrastructure services are very dispersed and have to be provided over a wide range of conditions. The requirement to link many services to higher level networks further complicates provision, particularly for roads. Because of the small number of beneficiaries often served, economic considerations dictate that rural infrastructure investments be designed to fairly
low standards. This, in turn, makes them fragile and maintenance intensive. If the skills and resources for their maintenance are not readily available, they will quickly break down. Given their geographical dispersion, innovative solutions relying on community-local government partnerships have to be found at the local level. At the community level, rural infrastructure may be financed by multiple social and community funds and non-governmental organizations and, on rare occasion, by the private sector (although there are often numerous obstacles to private sector provision given the high costs relative to the ability of rural households to pay). The many actors involved often means that there is no leader who champions rural infrastructure policy and resource issues at the national level.\(^{13}\) As a result, rural infrastructure services are often under-resourced and implemented in an unsustainable fashion, resulting in chronic underprovision.

- **Replicability**—how to ensure that institutional and financing arrangements can be scaled up for universal coverage. Total costs of rural infrastructure service provision are high. While low cost technology may mean that the cost of an individual well or unit cost of road may be low, massive and widespread need implies huge investment requirements and may entail cost-sharing arrangements. The small size of individual rural infrastructure investments makes them easy candidates for pilot operations and programs targeting in a few communities. However, the institutional and financial models involved may be unsuitable for scaling up and thus largely irrelevant for universal coverage.

### Box 15.2. Poverty Linkages of Rural Infrastructure Investments

Infrastructure services stimulate economic growth, contribute to building poor people’s capabilities, and facilitate their connection to political processes, markets and social relations. In addition, infrastructure services can be a tool for improving governance, engendering participatory decisionmaking at the local level and reducing vulnerability to risk.

- **Economic opportunity.** Provision of essential infrastructure increases both agricultural and non-farm opportunities in rural areas. Studies demonstrate that provision of reliable energy supply and serviceable roads not only increases agricultural productivity, reduces costs of inputs and outputs, and encourages greater use of efficiency-generating technologies (Barnes andBinswanger 1984; Binswanger and others 1987), but also supports the emergence of small businesses in rural areas (Binswanger, Khandker and Roszenweig 1989; also see chapter 21, “Energy.”) Likewise, transport and telecommunication services promote communication and information flow between communities and with urban centers, fixing information asymmetries and linking farmers to markets for goods and input supply as well as agricultural extension advice (Fan, Hazell and Throat 1999).

- **Capabilities.** Equally critical, infrastructure services enhance opportunities by building human and natural assets. The most well known link is perhaps the impact of safe water and sanitation on improved health through reduced incidence of diarrhea-related sicknesses and death (Klees, Godinho, and Lawson-Doe 1999). Improved access to water and energy can also free up significant amounts of time from collection of water and firewood. Even improving road services has been found to strengthen human capabilities by promoting higher levels and quality of education.

- **Social inclusion.** Infrastructure can play an important role in empowering people, linking isolated communities to the rest of the world and giving poor communities greater access and influence over political and local decisionmaking processes. Roads, telephones and Internet connections can directly improve communications and enhance poor people’s access to information. Electrification also is critical for broadening access to electronic communication and radio. Indirectly, well-delivered, quality infrastructure is likely to attract better teachers and agriculture extension agents and stimulate agro-industrial development (Pouliquen 2000).

- **Good governance.** Equally important is the opportunity created by well-crafted interventions in rural infrastructure to improve local governance through the establishment of transparent and accountable practices for priority setting, decisionmaking, implementation, operations and maintenance.

- **Enhancing security and risk management.** The provision of quality essential infrastructure can substantially reduce the vulnerability of poor people by helping them to cope with disasters and shock. Good drainage, a well maintained network of roads, and telecommunications to assist with relief and food redistribution efforts go a long way toward alleviating problems of flooding, drought, famine and earthquakes. Good transport facilities are integral to stabilizing food price fluctuations and, through arbitrage, to ensuring that poor sellers receive fair prices. Because of their employment potential, infrastructure works programs can be important components of crisis mitigation packages during times of economic shock (see chapter 17, “Social Protection,” and section below on risk).
• Poverty reduction—how to ensure the right balance is struck between requirements for cost-sharing and reaching poor communities. In rural settings, sustainability and replicability rely to a large degree on community capacity and autonomy, with regard to both implementation and financing. This means that policies that encourage sustainability and replicability will favor communities with better human and financial resources and could exclude the poor. On the one hand, subsidies to correct this imbalance can be costly and may frustrate local initiatives. Striking a balance which works to relieve regional and social disparities is difficult and the appropriate design depends a great deal on country circumstances.

Policy and investment options

These challenges can be overcome by clear and consistent policies and strategies, more effective and sustainable institutions, and sustainable financing arrangements. Policies and actions also need to explicitly take into account gender differences in service preferences, and recognize that rural areas span a significant spectrum from high income and high density areas to low income and low density areas. Climate, topography and farming systems will influence the range of technology and financing options available for infrastructure service provision.

Formulating clear and consistent rural infrastructure policies and strategies. Sound policies and strategies for each rural infrastructure sub-sector that are applied consistently country-wide are critical to ensure both national coverage (replicability) and increased sustainability. Although infrastructure services may be provided by a variety of actors—both government and non-government agents—effective and efficient delivery requires sector-specific and consistent “rules of the game” (for example, cost recovery policies, technical standards, and level of service guidelines). In addition to national sector policies, there is a strong case for examining the overall policy framework affecting all types of rural infrastructure service provision (for example, finance and governance arrangements, the enabling environment for private sector participation, availability of affordable credit, and national decentralization strategies).

Decentralizing institutional arrangements to tap the potential of local agencies and stakeholders. Accumulated experience has shown that monopolistic provision and production of rural infrastructure services by central government agencies may not work. The dispersed nature of most rural infrastructure services means accountable and decentralized arrangements involving local governments, communities, the private sector and central ministries are needed.

Various types of program designs are worth exploring: (1) service provision (and financing) by the public sector (central, regional, and local governments), with private sector service production; (2) service provision by community organizations, with private sector and/or community production and financing; (3) service provision by the private sector, with government regulation; and (4) private-public partnerships, including subsidy arrangements. Private sector management and financing of infrastructure services relieves overburdened and scarce public resources and administrative capacity, complements public sector programs and helps to ensure that services reach more communities. Examples include the use of minimum subsidy concessions for private provision of telecommunications services in rural Chile and the provision of electricity by small and medium sized entrepreneurs in rural towns in Cambodia. The roles of central government and private sector in service provision are discussed in box 15.3.

Local communities can be as susceptible as governments to corruption, incompetence or cronyism; likewise, without competition and transparency the involvement of the private sector is no guarantee of efficiency. Whether rural infrastructure is public or private, or whether it is managed at the community level, by the private sector, or at a more or less decentralized level of local government, the foremost consideration has to be accountability to poor users, which should not be taken for granted. Accountability has to be enforced through well designed mechanisms including (1) transparency in decision and project implementation and operation, (2) open competitive bidding, (3) aligned incentives for performance, (4) effective audits, (5) participation by all the subgroups of the beneficiary community, and
Box 15.3. Roles of Central Ministries and Private Sector in Rural Infrastructure Provision

The role of central sector ministries and agencies should be to support rural infrastructure development by (i) formulating policies and technical guidelines in a participatory fashion; (ii) providing critical public secondary rural infrastructure such as regional roads; and (iii) serving as a national level facilitator for donor-supported programs.

The involvement of the local private sector as a contractor financed by government or community funds is increasingly common. Involvement of the private sector in the direct provision of rural infrastructure services is less common. The relevance of private sector financing depends on the nature (public or private) of services provided, but there is considerable potential for involvement of private operators as most rural infrastructure services are rather ‘private’ in nature—with the possible exception of roads (Pouliquen 2001).

(6) wide dissemination of the achievements of individual communities (Pouliquen 2001) (refer also to chapter 8, “Governance”).

Developing innovative and replicable financing strategies. Sound financing arrangements are critical to the sustainability and broad-reaching impact of rural infrastructure investments. Given the wide range of rural infrastructure services and local conditions, there are no standard blueprints for financing; however, three broad principles should be consistently applied to program design.

- First, adequate cost recovery is often the only effective way to deal with lack of public resources for maintenance and operation. Not surprisingly, the potential for cost recovery is also a critical prerequisite to attracting “profit seeking” private investors. While policies that rely on operating and maintenance cost subsidies are often well-meaning attempts to address poverty issues, experience—for example, from the water sector—shows they often end up doing poor consumers more harm than good, by forcing them to rely on alternatives that are far more expensive than paying the full cost of adequate service provision.
- Second, upfront contributions from beneficiary groups toward initial investment costs should be used, bearing in mind the affordability constraints of the poorest. Community contributions can be an important component of the financing strategy; contributions to investment costs increases the likelihood that locally controlled investment decisions are made in a responsible way.
- Third, promoting private provision of services. Allowing for adequate cost-recovery potential is the first step in opening this door and must be complemented by simple and fair regulatory mechanisms and effective financial intermediation channels to allow private agents to enter this market. Private provision can be promoted by ensuring (i) a conducive legal environment—including clearly assigned and enforceable property rights and a legal framework for contract management and means of recourse; (ii) an appropriate policy framework—for example, reviewing subsidies for infrastructure services capable of being financed by the private sector; and (iii) the removal of physical and financial obstacles to private sector development through improved access to both affordable credit and basic facilities. As in the case of cost recovery, however, the best intentions can often lead to the worse fiascos. Many seemingly pro-poor policies, such as compulsory service provision requirements or low interest rate ceilings, must be evaluated against the prospect that the private sector may keep out of the most deprived areas or that the commercial financing sources on which some private investors may depend will dry up as a result (Pouliquen 2001).

15.3.3 Natural assets: increasing access to land and tenure security for the rural poor

Public interventions can improve land markets and tenure security and promote a more equitable distribution of land. To the extent that poor rural households own less land than non-poor households, they experience fewer of the direct benefits of such interventions than their counterparts. This section examines the policy, legal and institutional constraints to improving land tenure security and access to land, particularly for the poor. It proposes three specific interventions to strengthen land tenure and access for the rural poor: (1) land regularization and titling, (2) land reform, and (3) strengthening local land management systems. However, while these specific interventions are important, it is more often the legal, policy and institutional frameworks affecting land issues that are the most important levers in promoting land tenure security and access for the rural poor. Also, land tenure security and access are
not enough to achieve rural poverty reduction. Access to markets, physical and social infrastructure, technical assistance and complementary investments are also required to maximize the returns from land ownership.

**Land access and tenure security and rural poverty**

A land policy that provides for equitable land ownership and secure tenure offers direct benefits for the poor, as well as indirect benefits via economic growth, improved resource management, and strengthened local governance.

**Direct benefits for the poor**

- Access to land and secure tenure provide the poor with a source of livelihood, food security, and opportunities for labor intensive and other investments.\(^\text{15}\)

**Indirect benefits for the poor**

- **Growth.** The impact of land-related restrictions on economic growth can be very large.\(^\text{16}\) First, an equitable land distribution affects productive efficiency, since family-operated farms are generally more efficient than wage labor operated or collective production structures. Second, secure land tenure is essential to providing investment incentives, both at the household and the economy-wide level (including investments in related industries as well as foreign investments), which in turn raise the rate of growth in the broader rural economy. Third, the ability to use land as collateral for accessing credit can have far-reaching implications not only for households’ ability to obtain credit and make indivisible investments but also for the emergence and functioning of rural credit and other factor markets.

- **Sustainability and improved resource management.** Without well-defined and enforceable access rights, the natural resource base, and in particular common property resources, are easily threatened by encroachment and opportunistic behavior. Access to common property resources and common lands not only provides significant components of income for the poor\(^\text{17}\) but is also critical to reducing vulnerability in times of crisis (Cavendish 2000) and can be an inseparable part of indigenous people’s identity.

- **Governance.** Improved management of land assets can support decentralization and local government fiscal responsibility (via land taxation), make land management institutions more accountable, and can reduce conflict generated by unequal access to land.\(^\text{18}\) The ways in which demobilized soldiers and refugees can gain access to land, and the ways in which restitution claims and conflicts over land are resolved, will have an immediate impact on the stability of agreements to end such conflicts.

**Constraints to equitable land distribution and secure tenure**

Despite these important benefits, there are three broad constraints that prevent the emergence of more equitable land distribution and secure tenure. First, households and individuals may not be able to gain secure property rights to land, either because of shortcomings in the legal system and/or because the institutional framework to enforce such property rights is inadequate. To realize the benefits associated with land ownership, such ownership has to be clearly defined and enforceable at reasonable cost, although there is no need for such rights to be either completely transferable or individualized (box 15.4).

In addition, distorted or ill-functioning land markets may make it difficult for land to be allocated to its most productive use. Finally, there are a number of specific constraints that reduce the ability of the poor to access land and achieve secure tenure which need to be addressed.
Box 15.4. Group Ownership of Land

Condominium associations in industrial countries demonstrate that group ownership, if legally recognized and based on clear rules, can be efficient. This is relevant for rural areas where there is often group ownership of productive land, which is often cultivated individually (given the problems with monitoring in agricultural production). There are also many countries (for example, China, Vietnam, Georgia, and Mexico) where households can obtain use rights but not a fully transferable title. As long as rights are well defined and can be exchanged freely and at low cost, this does not create major disadvantages. However, such quasi-formal arrangements are unlikely to be the most suitable in situations where land can function as collateral for well-developed credit markets.

Secure property rights

Legal framework

There are several reasons why the legal framework may not allow for secure long-term property rights:

- **Property rights are not well defined or exclude certain groups (for example, women).** For example, in the FSU, there are some countries with ambiguous property rights that have prevented households, individuals, or groups from achieving secure property rights.
- **Actual users do not enjoy full legal recognition.** Even in cases in which private property rights are generally recognized, the rights of certain groups of land users—such as women, holders of customary rights, or holders of secondary land rights (in cases of multiple land users, such as herding)—may not be recognized. This has major implications for equity, the sustainability of resource use and productivity, especially when the excluded groups are important land users (for example, when women are the main cultivators).
- **Co-existence of multiple and mutually inconsistent bodies of law.** In many countries, large areas of land may be subject to different and competing legislation. This creates uncertainty, conflicts, and opportunistic behavior (as landowners may appeal simultaneously to different authorities and bodies for conflict resolution).
- **Inappropriate guidelines for land use planning.** Public regulation of land use is justified when externalities and public goods are involved. However, where unrealistically high and unenforceable standards are imposed, governments can put land out of the reach of the poor and, at the same time, open the door for bureaucratic abuse and corruption (Mabogunje 1992; Farvaque and McAuslan 1994), with negative impact on business start-ups and investment.

Institutional shortcomings

Institutional shortcomings can also limit the ability to enjoy and transfer property rights. When institutions are inaccessible, have unclear mandates, and are not able (or willing) to respond to demand, transaction costs for land exchanges rise. This is most detrimental for the poor who seek to get their property rights legalized. As a result, they often choose to retain informal land rights, with the negative consequences that are well elaborated in the literature. Institutional shortcomings can include:

- **Multiple institutions with overlapping and ill-defined mandates.** When different types of land (for example, protected areas, agricultural land, and urban settlements) are managed by different agencies, the validity of land titles can be questioned, thus undermining confidence in the whole system. A frequent case is that competing agencies issue title to the same piece of land (for example, land reform agencies parceling out protected lands), which has led to serious problems, for example, in Bolivia.
- **Integration between cadastre and registry.** Lack of integration between the two systems greatly increases the costs of implementing land transactions and of obtaining clear information about ownership status.
- **Legal basis and administrative capacity for conflict resolution.** While the first priority is to have legislation in place that prevents new conflicts, many countries have a backlog of conflicts that can take years to clear. The inability to resolve conflicts quickly may limit private investment. Also, if
the transaction costs of getting conflicts resolved through official channels are high (or if laws are not well disseminated), it is normally the poor who suffer the most.

- **Inefficiency, lack of accessibility and technical capacity.** In addition to constraints imposed by the broader institutional framework, land administration institutions in many developing countries also suffer from shortcomings in technical capacity and a highly centralized structure. These inefficiencies increase operating costs and undermine both performance incentives and customer orientation, particularly vis-à-vis their poorer and less powerful clients.

**Distorted and malfunctioning land markets**

Markets are of critical importance to facilitating the efficient use of resources, including land, within an economy. Key policy issues that prevent the free and efficient operation of land markets and increase transaction costs include:

- **Macroeconomic distortions.** Historically, tax breaks and subsidies that implicitly or explicitly targeted large land owners, as well as speculation in expectation of major urban land booms, increased land prices beyond the productive value. This put land out of reach of the poor and led to land concentration. The adoption of adjustment policies and fiscal tightening in many countries, diminished, but did not eliminate, the importance of these issues.

- **High transaction costs.** In addition to action by public institutions, obtaining land title and effecting land transactions normally require the services of private professionals (for example, notaries and surveyors). In many countries, entry barriers into these professions allow these groups to establish quasi-monopolies, to restrict supply, and thus to charge steep premiums. Regulatory oversight in this area could, by creating the preconditions for better functioning of land markets, have a large impact.

- **Restrictions on land rental.** Restrictions on land rental that were often adopted as a means of improving tenants’ welfare and eliminating “feudal” production relations have generally had the effect of leading land owners to evict tenants and resort to cultivation by wage labor (or returning land to grazing). As a result, even in countries with high pressure on land, there is much productive land that lies relatively idle because of administrative restrictions.

- **Restrictions on land sales markets.** Land ownership ceilings or restrictions on land sales, even if popular, may lead to negative effects on land supply, have a high cost of enforcement and actively encourage corruption, thus further driving up land prices and restricting access to land (Deininger and Binswanger 1999). Equally important, as land can no longer be used as collateral, such restrictions severely undermine investment incentives in rural areas. Fiscal instruments, such as a flat land tax, are at least as effective in discouraging speculation, have lower enforcement costs, and can have positive impacts on local government structures.

**Additional factors limiting land access by the poor**

**Historical distortion and biased policies.** Colonial domination in most developing countries has generally been associated with economic and non-economic restrictions on land access and land use, the impact of which is still clearly visible in many countries (for example, South Africa, India, Brazil). Justifying such measures by the need to attract foreign investment, many countries continue to grant concessions. However, giving more secure and transferable land rights to local communities could help promote both investment and equitable land access.

**Land reform regulation.** Often land reforms intended to increase land access by the poor has ended up restricting such access. Maximum holding sizes and rental restrictions undermine land access by the poor through rental and sales markets. In many countries, “second generation” issues have arisen because beneficiaries’ ability to transfer the land received under land reform programs was highly restricted. This is of particular relevance when, as a result of successful land reform, beneficiaries’ children tend to move out of agriculture, possibly giving rise to a new class of “absentee landlords.”
Illiquid financial and land markets. In many countries, long-term credit markets that could provide financing for land acquisition do not exist, which excludes from the land market even those who would be able and willing to finance land acquisition by themselves. Also, lack of market information on land sales and prices further impedes the functioning of land markets.

Policy options

In addition to addressing the legal, policy and institutional issues discussed above, the main options to promote land tenure security and land access are: systematic land regularization and titling programs, land reform programs, and improved land management regimes that rely on local practices.

Land regularization

Systematic land regularization can have a big impact on land values and investments that target the poor (Deininger and Chamorro 2001). Dealing with land regularization involves: (1) legal and institutional reform, (2) public information campaigns on land rights, (3) improved mechanisms for conflict resolution often by relying on out-of-court administrative approaches, (4) recording of land rights, and (5) the modernization of the institutional infrastructure to access up-to-date registry information. While such projects were originally considered to be merely technical in nature, it is now recognized that economic and social factors have to be taken into account as well. For example, the specific mechanisms to provide greater security of tenure should be socially recognized, and acceptable and affordable from a fiscal point of view. Administrative requirements and costs for long-term maintenance of the system need to be known, and not impose undue burdens on the poor, or such high fees as to undermine incentives for subsequent registration.

Land reform

Where significant underutilization of land exists side by side with landlessness and destitution (or tenants who are unable to gain land ownership rights), a targeted program of land transfer may be needed. One option is a “negotiated” reform where a fungible grant is provided directly to beneficiaries rather than being channeled through government agencies. A number of conditions should be met by land transfer programs:

- In addition to the land, beneficiaries require training and capacity building, as well as provisions for complementary investments to make the land productive. (For examples of complementary programs with land reform see Deininger and others 2001 on the Philippines and Buainain 1999 on Brazil.)
- Explicit or implicit grants should explicitly target the poor.
- The rights given to beneficiaries have to be secure and unconditional. To allow access to credit and possible movement of beneficiaries’ children out of agriculture, rental or sale of the land should be allowed, at least after some initial period.
- The rule of law, and in particular existing property rights that have been acquired in good faith, need to be respected; expropriation without compensation would not only have deleterious effects on the economy as a whole, but also have the potential of generating a wave of subsequent restitution claims.
- The implementation of the land reform will need to involve beneficiaries as well as government and NGOs at the local level with a strong element of participation, rather than a top-down and centralized approach.
Strengthening local land management

Current approaches to improve the management of common and/or scarce land resources aim to explicitly recognize the multiplicity of uses and users and to record a multiplicity of existing rights. Rather than impose western-style paradigms, they draw upon the following principles:

- Mechanisms are needed to foster collective action within an appropriate incentive structure and in a way that is sustainable in the long term. To establish these, local institutions need to be representative and transparent rather than merely reinforce privileged access by local elites.
- Overlapping rights need to be acknowledged explicitly and in a way that provides a means for exercising them. The management of multiple land rights can be facilitated through improved management of the natural resource base.
- Wherever possible, institutions for conflict prevention and resolution that build on traditional arrangements need to be in place. Ideally these will be able to perform new functions (for example, improving management) and prevent rather than just resolve conflict.

15.3.4 Natural assets: irrigation development and poverty reduction

A dominant focus of rural development strategies for the past several decades has been development of irrigation and drainage infrastructure to expand the area of productive irrigated agriculture. Irrigation and drainage development are widely credited, along with new crop varieties and increased use of inorganic fertilizers, in the success of the Green Revolution. Irrigation continues to provide the basis for agriculturally-based rural development. This section explores how benefits from investments in irrigation and drainage might be tilted more toward the poor without compromising the critically important contributions of this sector to regional and national economic growth. The main question addressed is: how can irrigation and drainage development do more for the poor?

Benefits of irrigation and drainage for poverty reduction

The higher productivity of irrigated agriculture and the stretching of the agricultural season permitted by irrigation offer important direct and indirect benefits for farmers and, more broadly, rural residents.

Direct benefits

- Farmers with at least some irrigated land benefit directly from irrigation water through higher productivity and a longer, more flexible cropping season that allows new and higher value crops to be grown.
- Many farmers also benefit from improved drainage with irrigation investment; this is particularly important to small farmers, who often are the most sensitive to waterlogging and salinity because even marginal loss of productivity could have serious impact on their household income and property value.
- All rural residents, both poor and non-poor, can benefit from domestic utilization of irrigation water as well as improved water quality through adequate drainage.
- Livestock producers are also often able to benefit from irrigation infrastructure to water their animals.

Indirect benefits

- Irrigation provides increased employment opportunities during a longer agricultural season and at higher wage rates.
- There is a greater security of employment and income (protection from drought) with irrigation.
- Irrigation can generate expanded employment options in agricultural services linked to the more productive irrigated economy.
Irrigation leads to improved control of water-borne diseases (for example, malaria and bilharzia) in well drained land.

There is improved sanitation with irrigation, especially in those rural areas without public sewage services.

While public irrigation development provides critical benefits to the poor, it provides proportionately greater benefits, particularly direct benefits, to larger landowners where water is provided according to land area. Moreover, wealthier farmers benefit from irrigation not only in terms of higher land value and production potential, but also because they have better access to information (for example, market prices and weather predictions), which allows them to take better advantage of the new agricultural opportunities.

The poor face particularly difficult barriers in accessing the direct benefits of irrigation development for three main reasons:

- they have little or no land, or their land is in remote areas far from water sources and/or primary irrigation networks;
- even when they have land, the poor are often without irrigation, as they tend to have less political influence and are often excluded from participation in water resource allocation decisions; and
- the poor tend to have less access to the range of complementary development resources (for example, credit, education, and extension) necessary to maximize the return on their irrigation investments.

**Policy options**

The policy options laid out below focus on increasing the access of the rural poor to the benefits of irrigation, beyond improving their access to land and to technical assistance, microfinance, and other complementary services. Increased access to irrigation by the poor can be seen promoted through two broad approaches: the first aims to improve the overall efficiency, transparency and pro-poor focus of irrigation policy and investments; the second focuses on the implementation of interventions with the explicit target of improving the access of the poor to irrigation.

**Overall improvements to the irrigation and drainage sector**

Increasing the overall efficiency of irrigation systems, creating transparent mechanisms for allocating water, and acknowledging the variety of different uses of irrigation water—particularly those uses (aquaculture, livestock, domestic needs)—relevant to the poor—are established objectives. There are three entry points for affecting the overall quality of irrigation and drainage services: the policy environment, infrastructure investments, and management/capacity interventions.

**Policy environment**

- Pricing and incentive policies that promote efficient use of water and protect the poor (for example, by using block tariffs to protect base water consumption and higher charges for larger water consumers) (see technical note L.2 and box 15.5).
- Participatory management approaches involving water users in decisionmaking, as well as outright transfer of management and/or ownership of the irrigation system to the users (see technical note L.2).
- Water markets with an established legal and institutional framework (see below) that can protect the poor and small producers, and with options that allow small buyers to transact as a group (strengthening their cooperative negotiation power) (see technical note L.2 and Thobani 1997).
Box 15.5. Water Supply Subsidies for the Urban Poor in Santiago

In the case of Metropolitan Water Supply and Sanitation Companies of Santiago (EMOS) in Santiago, Chile, a system of direct subsidies for water is managed by the central government. A budgeted amount of subsidies is allocated among regions and municipalities each year to needy families, according to predetermined social and economic criteria. The subsidy applies to fixed and variable charges of water supply and sewerage services accounts for the first 20 m³ of monthly consumption and varies between 25 percent and 85 percent of the bill. The municipalities use the allocated budget to pay the water utility directly. In Santiago, an additional help to the poorest families is provided by EMOS, the water and sewerage agency, in the form of a special loan for water connections (Rivera 1996).

- A regulatory framework that protects the interests of the poor and stimulates investment (for example, via policies for setting and enforcing water service fees, procedures and oversight of sales and purchases in water markets, auditing water user associations, and environmental monitoring and enforcement of groundwater, salinity and pollution requirements).

**Improving infrastructure**

- Rehabilitating and modernizing irrigation and drainage infrastructure to improve system performance.
- Providing adequate drainage for irrigated lands in which drainage implementation was deferred and productivity is declining due to water logging and salinization (for example, in Punjab, Haryana and Rajasthan); as well as in tropical and sub-tropical areas frequently devastated by recurring cyclones and heavy rains (for example, the case of the rural poor of Orissa in India).
- Giving greater attention to water quality management in irrigation and drainage and particularly with the disposal of drainage water and its environmental impact.

**Improving water management**

- Providing management training and agency re-orientation to improve service provision.
- Integrating domestic and industrial utilization of irrigation water into investment planning and design.
- Providing organizational assistance to establish water user associations or other types of producer organizations such as marketing cooperatives, and then providing follow-up technical and administrative support to the new organizations (this is of benefit to all farmers, but needs to be done in a deliberate way that gives particular access and voice to the poor and to women).

**Targeted approaches to reaching the poor through irrigation and drainage investments**

Targeted approaches are needed to enhance the poverty impact of irrigation and drainage development and to counteract tendencies toward elite capture of irrigation benefits as well as the gender bias that often exists in irrigation programs. These interventions focus on strengthening the capacity of the poor to participate in water management decisions, promoting appropriate low-cost technologies for irrigation, targeting irrigation investments in poorer rain-fed areas, and redistributing water rights. The importance of incorporating women’s interests into project planning and design cannot be overestimated, in light of their economic contribution to the sector and their role in domestic water use. The targeted approaches to reaching the poor include improving the policy framework, promoting pro-poor technologies, developing new irrigation for the poor, and pro-poor management of water resources.

Characteristics of these approaches include:

**Pro-poor policies**

- Redistributing water rights where the poor could use water productively—for example, the introduction of a water redistribution system whereby those controlling the rights are paid compensa-
tion by the government, and the rights are then transferred to selected poor (for example, water reforms in South Africa following the era of apartheid) (see Van Koppen 1998).

- Allocating new water rights to the poor when new surface or groundwater resources are developed, either through a direct rights assignment (as in Sukhomajri, India, where water from a new reservoir was allocated on a household basis regardless of land holdings), or through land distribution (as in irrigated land settlements in Sri Lanka, where land allotments are earmarked for poor farmers).
- Including the adequacy and quality of domestic water availability as an explicit objective of irrigation and drainage infrastructure.
- Incorporating new benefits earmarked for the poor and women (for example, aquaculture, home gardens, grazing rights, access to resources on common or public lands) as components of irrigation and drainage programs.

Pro-poor technologies

- Promoting technologies that are affordable for the poor (for example, very small pumps, low-cost drip, water harvesting) and can be used on very small fields or for improved productivity of household gardens; minimizing the scale of displacement and resettlement through smaller infrastructure (for example, dams, canals) (box 15.6) (Shah and others 2000).

Developing new irrigation

- Options for developing new irrigation (including supplemental irrigation) in rain-fed areas with concentrations of poor people who have some land include entirely new systems that tap currently under-utilized water sources, especially groundwater (see box 15.6); expanding existing systems to cover new areas; and supplementary techniques such as rainwater harvesting, recharging, or soil conservation and land treatment.

Pro-poor management

- Involving the poor and women in management entities (for example, water user associations, management boards) that make water use and new investment decisions.
- Organizing self-help groups of poor farmers, women, and the landless around asset-generation related to the irrigation and drainage investments, for example, agro-forestry groups that use irrigation water, microeconomic-credit or marketing cooperatives.
- Providing training, capacity building, and extension services aimed at poor and female farmers.
- Addressing gender issues in project planning, design, and implementation through participatory processes that involve women.

15.3.5 Financial assets: rural microfinance – when is it appropriate and what are the options?

This section reviews various microfinance products and institutions and their suitability for rural clients. The main message is that microfinance initiatives are most effective when targeted to the current level of rural economic development and that microcredit is not a uniformly viable option for poverty reduction. Outreach and sustainability are key. For microcredit to be successful, certain basic conditions should be in place; when these conditions are not present, savings and grants initiatives may be more appropriate, along with investments in basic skills, social capital, and economic infrastructure. Investments in human and physical assets may complement rural microfinance initiatives and, in those cases where microcredit is not yet appropriate, such investments can help accelerate access to credit services.
Box 15.6. Accessing Groundwater for the Poor

Groundwater is an important source of irrigation in rural areas. In countries where private access is not prohibited by law, it presents an opportunity to rectify the biases against access by the poor to irrigation benefits (Kahnert and Levine 1993). However, the ability of the poor to get credit for purchasing new technologies is limited compared with that of wealthier farmers. For example, low energy prices in many countries allow wealthier farmers who already own pumps to increase capacity, sell water in unofficial water markets and consequently deplete the water table—preventing small farmers from using their simpler equipment to access groundwater.

The emergence of low-cost technologies like treadle pumps and gravitational drip irrigation provides a new frontier for poor farmers without risking the environment. The treadle pump is a two-cylinder suction pump operated by two pedals so that users can lift water up to about 7 meters. Treadle pumps have shown remarkable spread among the poor in Bangladesh and increased their income substantially. In Bangladesh, the pump itself is sold for just $9. The sink soil cost in Bangladesh is five cents per foot. The market rate for the whole system, therefore, can be as low as $35. So far, 1.3 million treadle pumps have been sold in Bangladesh at farmers' investment of $40 million in total in twenty years. The net income earned from these investments adds up to $650 million according to a study conducted by the International Water Management Institute (IWMI). Donors and NGOs have contributed to this process primarily in promotional activities of the technology.

In addition to technology to access groundwater, the design of an institutional framework (for example, watershed committees, groundwater districts) that secures the equitable and sustainable use of the aquifer is also important to ensure that the poor benefit from this resource.

Sources: Shah and others (2000); Kay and Brabben (2000).

Microfinance and poverty reduction – the financial systems approach

Microfinance, whose advantages are well known, is particularly attractive as a tool to help the poor since it is widely seen as improving livelihoods, reducing vulnerability, and fostering social as well as economic empowerment:

- Farm and off-farm entrepreneurs need timely access to appropriately designed credit products to take advantage of market and investment opportunities.
- Households need access to safe savings and credit facilities to manage risk and smooth consumption.
- Access to loan, deposit, and payment services can substantially accelerate the adoption of modern technologies and production patterns leading to overall rural economic growth, which benefits both the poor and non-poor.

In most developing countries, however, the development of a well-functioning rural microfinance market must overcome important challenges created by conditions in the rural economy which increase the costs and raises the risks of providing financial services. The key constraints to rural financial market development are:

- a dispersed population and a limited physical infrastructure, which raises the transactions costs of providing and obtaining rural financial services (for example, travel and loan monitoring costs);
- a high risk environment leading to significant and often covariate income fluctuations, which reflect strong seasonality, the impact of climatic forces on rain-fed agriculture (yield risk), and international and domestic price risk;
- a lack of collateral on the part of asset-poor rural households (for example, land, livestock, or vehicles), a problem further complicated when existing collateral is not recognized by the institutional framework (for example, inadequate land titles or legislation that does not allow for movable assets to be treated as collateral), or there is a weak institutional framework that does not fully enforce existing collateral regulations; and
- a history of unsuitable policy initiatives to address these constraints (see below).

To overcome these challenges, rural development efforts through the 1980s mainly relied on supply-led government interventions in the form of targeted credit through state-owned agricultural development banks (or farmer cooperatives, in some cases). These agencies would generally receive government subsidies and would on-lend their funds to clients (often well-connected, large farmers) at below-market
interest rates. Thus, the emphasis was on disbursing agricultural credit, and the development of sustainable financial institutions and markets was neglected.

Recognizing the lack of sustainability behind this approach, a few institutions took the initiative to raise interest rates, bring down costs and innovate in ways that greatly reduced donor dependence and increased the scale of their operations. Drawing on the experience of these institutions, the “Financial Systems Approach” emerged in the early 1990s. This new approach has a more pro-poor focus, and emphasizes three core themes:

- creating a favorable policy environment, including not only macroeconomic stability but also reductions in historical biases against the rural sector;
- building the capacity of rural microfinance institutions (RMFIs) to deliver adequate, appropriately designed credit, savings and insurance services in a self-sustaining manner; and
- strengthening the legal and regulatory framework for rural finance, including reforms in the titling and registration of land, creation of registries under secured transaction laws, moveable property reforms to enhance their value as collateral, the elimination of usury laws (for example, interest rate caps), and licensing of specialized microfinance institutions.

While this paradigm emphasizes increasing the access of traditionally underserved clients to financial services, it suggests that microcredit is not uniformly appropriate for the rural poor. For microcredit to be appropriate, a minimum level of ongoing economic activity, social and economic infrastructure and overall stability are required. In their absence, clients may not be able to benefit from credit and will simply be pushed into debt that they cannot handle. Hence, other instruments are needed to complement microcredit in raising the assets and income-earning potential of the rural poor.

**Policy options**

*When is microcredit appropriate?*

Microcredit is most likely to be appropriate when the following three broad conditions are in place:

- **Client capacity to manage debt.**
  - For the chronically destitute, credit is unlikely to succeed unless it follows efforts to reduce vulnerability and build skills, confidence, and a minimal financial base.
  - Illness that keeps people from productive activities is a major cause of debt arrears. HIV/AIDS poses a particular challenge for risk management when some of the poor may become less able to benefit from credit while others have increased need to enter business to offset lost household income.

- **A preexisting level of basic social and economic infrastructure and economic activity.**
  - Severely disadvantaged or remote rural areas lacking infrastructure, services and/or access to markets may not be able to support the minimum level of economic activity needed to provide a positive return on a microenterprise investment. Also, in these remote areas, the costs of providing microcredit may be prohibitive for all but the most informal delivery mechanisms.
  - In an immediate post-emergency environment, economic activity may not be sufficiently viable or stable (at least in the short-run) due to the disruption of basic services, infrastructure, purchasing power and confidence in the economy.

- **A preexisting level of economic, social, institutional and political stability.**
  - If non-collateral credit methodologies are to be used, sufficient social capital or societal cohesion is needed.
  - A legal/regulatory environment for monitoring and enforcement should be in place that does not constitute a significant barrier to either microenterprise activities or microcredit delivery.
Also required is a target population that does not face an overly high level of risk, either due to dependence on a single economic activity (such as a single agricultural crop) or a high likelihood of future crises such as civil violence, natural disasters or hyperinflation.

**Who should provide microcredit?**

If the conditions for providing microcredit are in place, ideally it should be introduced by a strong specialized microfinance institution, local microcredit NGO, or a bank or non-bank financial institution that is committed to poor clients. If these are not present, an international microfinance organization may be able to develop a local microfinance partner, or existing savings and credit associations or groups may hold potential. More important than institutional form is a clear and demonstrated commitment to the two basic tenets of high-quality microfinance—outreach and sustainability:

- **Outreach**—providing services to large numbers of clients (breadth) and reaching poorer clients (depth);
- **Sustainability**—covering all costs, and therefore having the capacity to be sustainable and independent of subsidies in the longer term.

In order to satisfy these two tenets and benefit the maximum number of the poor on a sustainable basis, institutional and client discipline is needed, as outlined in box 15.7.27

Institutions with goals other than financial intermediation to the poor, such as humanitarian or development NGOs, are unlikely to make the hard choices necessary to ensure client and institutional discipline. While grant-making bodies may have the operational infrastructure for disbursing money, they are not appropriate mechanisms for achieving the institutional and client discipline necessary for successful microcredit. Seasoned observers estimate that for every 20 nonfinancial service organizations that consider microfinance as a new service, only one may actually be able or willing to pay the high price of implementing the operating principles required for sustainability. If there is really no alternative, then institutions should strictly separate non-financial and financial services at every operational level (client, systems, accounting, and management).28

The Financial Systems Approach suggests that the priorities should be to remove legal barriers to rural financial intermediation and build the institutional capacity of RMFIs. The desire to achieve rapid impact on rural poverty can lead to unsustainable credit lines being pumped through inappropriate institutional structures, distorting the rural financial market rather than supporting its development. Attempts to channel financial services through development banks or non-financial institutions have been shown to be costly, often politicized, and largely unsuccessful in creating viable long-term

---

**Box 15.7. Principles for Successful Microcredit**

Successful microcredit that is sustainable rests on two basic principles: institutional discipline and client discipline. If client or institutional discipline is seen as too confining or impossible to implement in a given setting, an institution’s attempt at microcredit is likely to fail. **Client discipline** means that poor people take responsibility for their decisions, agreeing to and making on-time payment of their principal and an amount of interest that will cover the full cost of the service. Microfinance institutions that demand such discipline from their clients are empowering, whereas those that treat them as “beneficiaries” are more likely to foster a culture of entitlement and dependency.

Institutional discipline refers to a set of practices that lead to sustainability of the program, quality of service, and efficiency of operations, including:

1) charging interest rates that cover all costs, even when adjustments are made for donations and subsidies to reflect a market rate cost of funds;
2) requiring full, on-time repayment from clients, and tracking repayments in a regular and frequent manner;
3) creating products and delivery techniques that are appropriate for clients;
4) investing in management information systems that provide timely and appropriate guidance to staff and management;
5) providing field staff with performance incentives;
6) introducing sufficient decentralization to permit agility and eventual scale-up;
7) planning from the start for capacity, growth, and sustainability; and
8) good governance and management.
microfinance providers with significant outreach. Indeed, there is a high risk of undermining the more sustainable longer-term solutions.

Similarly, establishment of “revolving funds” have not proven to be effective in establishing sustainable financial mechanisms that survive long beyond the end of donor funding. Especially when disbursed through government programs or social funds with a grant orientation, they rarely succeed in introducing microfinance instruments that achieve high repayment and sustainability, and they tend to displace rather than build local savings mobilization.

Worldwide experience demonstrates that strategic development of a sound rural microfinance industry can effectively reach large numbers of the poor and improve their livelihoods. Financial and capacity-building support to RMFIs should be delivered in a performance-oriented way that fosters quality financial services and the movement to scale and financial self-sufficiency. Funding should be linked to clearly defined performance indicators that can be easily monitored (see chapter 3, “Monitoring and Evaluation”). Government should also place priority on developing local expertise, leadership and coordination of different programs and donors.

**When would savings be more beneficial?**

Evidence is mounting that the poor have strong incentives and ability to save—often in preference to credit/debt—but generally lack convenient financial instruments to do so. Hence, the provision of voluntary savings services may be an effective response to some of the situations identified earlier as unsuitable for microcredit, or in which limiting factors constrain the potential of microcredit. No matter how poor, families almost always have the ability and the desire to save, whether in cash or in-kind; cattle and jewelry are common non-cash saving mechanisms. Poor households save to manage risk and plan cash flow for future investments. They reduce their vulnerability by saving to cushion against shocks such as natural disasters, crop failures, job loss, illness and death. They “smooth consumption” by saving enough to support themselves during seasons when their income is lower, and accumulate sums large enough for family and business investments. Savings institutions, such as rotating savings and credit associations (ROSCAs) also help to build social capital in the community.

Savings facilities will help household risk management the most when they are safe and accessible to the depositors, and when the poor can deposit small amounts on a frequent basis. To allow full access to deposits, the financial institution must be well managed and have sufficient reserves to respond to periods of unusually high demand caused by natural or economic crises.

Unfortunately, most poor communities still lack access to safe, accessible, liquid savings mechanisms. One option is to provide regulated financial institutions with technical assistance to expand their deposit products so that they include savings facilities more suited to the rural poor. Another option is supporting NGO and informal microcredit institutions to work more closely with regulated institutions to provide savings services. Such RMFIs can play a critical role by brokering savings arrangements between poor clients and well-performing regulated financial institutions (including credit unions). Where the legal option exists, unregulated RMFIs can also be assisted in transition to a regulated legal form. For example, many savings and credit associations are informal financial institutions, but may have the option of registering as formal financial entities in the form of credit unions or savings and credit cooperatives.

**When should grants be considered?**

Where the objective is to provide a financial safety net to poor households, microeconomic grants may be an effective instrument. Grants can be the first step in reducing vulnerability and can allow the hardcore poor to invest time and resources in learning skills and building an asset base, both of which are necessary to improve their income-generating potential. The difficult issue is to distinguish between: (1) grants used as a stepping-stone out of poverty, to build human capital or community assets that can serve as the basis for higher income and credit worthiness in the future (for people who are unable to bear a
Box 15.8. Income Generation for Vulnerable Groups Development

BRAC’s Income Generation for Vulnerable Groups Development (IGVGD) Program provides a model for this graduation process. Targeted towards destitute rural Bangladeshi women, the program assists participants to move from absolute poverty to economic independence. Over 10 years, nearly a million participants have made that transition. The graduation process starts with grants for food and progresses through training to savings to self-employment. This appears to be sufficient to break down the barriers of extreme poverty, social isolation, lack of productive skills, and poor self-confidence that previously kept this population from self-employment.

Grant programs that can be used as a stepping-stone out of poverty include:

- **Grants that support community development efforts** and finance basic infrastructure, social intermediation, and non-financial services, such as information and extension via social development or rural investment funds and community-driven development programs (chapter 9, “Community-Driven Development”). These are particularly appropriate when remoteness and poverty in targeted communities create high transaction costs, risks and low debt capacity, which impede delivery of sustainable financial services. Grants to communities can also include resources for income-generating activities. In these cases the beneficiary contribution is often greater than for activities that support community-based public goods.

- **Grants that provide a useful first step to support individuals** with food and skills training to allow them to strengthen their income-generating activities and build up a sufficient level of savings and economic activity to qualify for microcredit. A key issue when providing grants to individuals is ensuring that the beneficiaries graduate from the program and do not view the grants as a permanent income supplement. Most graduation efforts would be implemented through inter-institutional or inter-program partnerships, with each partner focusing on areas of comparative advantage. A grant program described in box 15.8 for vulnerable groups in Bangladesh demonstrates that successful program graduation takes time, which may limit the potential for short-term project initiatives in grant programs.

- **Also, those hit by crisis may need a temporary safety net.** Displaced persons during or immediately following a conflict, or those affected by natural disasters such as earthquakes and floods, may be suitable candidates for one-off, targeted “safety net” grants that enable them to rebuild their livelihoods and replace lost assets. In these cases, coordination with an existing microfinance institution is the best way to facilitate longer-term access to financing. Some microfinance institutions may be strong and flexible enough to provide a similar service to their clients on a commercial basis. The Bangladeshi microfinance institution ‘ASA’ responded to the 1998 flood by offering its clients the opportunity to either withdraw their savings, or to take out a consumption loan.

Nevertheless, grant support can create long-term dependence. Box 15.9 provides guidelines for microeconomic grants to ensure that they complement, rather than crowd out, commercial financial services and productive investments.

Investments that will result in an income stream in the short term are better funded through RMFI loans. Funding such investments with a microeconomic grant not only risks ‘crowding-out’ long-term providers of loan finance, but also encourages an inappropriate cost structure for the economic activity, putting at risk its future success. Microfinance providers and microfinance experts working in the region should first be consulted to ensure that any microeconomic grant program does not (at worst) compete with or undermine local microfinance institutions, and (at best) is carefully coordinated with microfinance to provide an eventual way out of grant dependence. Informal microfinance providers, such as village banks and savings and loans clubs, should also be included in the consultation process, as these have an importance for the poor that is disproportionate to their profile and size.
Box 15.9. Microeconomic Grant Guidelines

To achieve maximum impact, microeconomic grants should:

- Be very carefully targeted to those that microcredit cannot serve in a particular context (for example, the destitute poor and temporarily displaced persons);
- Be carefully structured and monitored, to ensure that they go to the needy;
- Be accompanied by training or mentoring, when grants are intended for people to enter productive activities;
- Not finance investments that compete with existing private businesses or that could have been financed by a microfinance institution.

Where there are no active formal or informal RMFIs, one way of encouraging financial institutions to expand lending to rural populations is to include the staff and management of RMFIs and banks in the selection committees for grant programs. Through this involvement financial institutions can assess the viability of expanding their operations in a risk-minimizing way.

15.3.6 Financial assets: maximizing poverty reduction from sustainable livestock development

Livestock is both a means of production and a mobile capital asset, with the latter making it an important tool for risk management, as well. There are four main types of livestock production systems and a host of constraints that affect these systems differently (for example, animal health, access to input and output markets, access to land for grazing, and environmental waste management). The main policy options to overcome these constraints include: (1) creating an equitable and efficient policy framework that encourages a commercially oriented sector, while protecting the rights of poorer and smaller livestock producers; (2) providing critical public goods to protect the assets of producers, improve market access and raise productivity; and (3) implementing targeted programs of support for poorer livestock producers to facilitate their involvement in the sector. This section assesses the importance of livestock to poverty reduction and growth, identifies the main constraints associated with the various types of production systems, and proposes policy options to overcome the key constraints.

Livestock and rural poverty reduction

An estimated 600 million rural poor depend on livestock as part of their livelihood. Livestock owners use livestock either as capital (as storage of wealth), as a means of production and livelihood (meat, milk, wool, eggs), or both. As a capital asset, livestock is often the sole instrument for savings and insurance, because more formal banks are unreliable, too remote, or provide unattractive returns in situations with high rates of inflation. Investments in livestock are used to hedge against unexpected natural disasters such as disease outbreaks, droughts and floods, including traditional hedging/safety net systems. As a means of production, livestock allows the poor to capture private benefits in nutrients and income from communal areas. Much of dry-land agriculture in Africa and South Asia is based on the transfer of nutrients from common rangeland areas to individual plots. Livestock provides critical cash for payment of school fees and other incidental expenses. Livestock is often kept by women, and in many societies the revenue of livestock production goes directly to them. In addition to these direct benefits of livestock ownership, in many developing countries—particularly those with strong pastoral resources—livestock and livestock-related activities (tanning, trade, health services) provide a significant share of total GDP as well as exports.

There are four main livestock production systems, each of which faces a different set of constraints.

- **Pastoralists** reside mostly in the arid and semi-arid areas of Africa and Central Asia and have livestock as their main source of livelihood. The critical constraints they face are the extreme variability of their environment and the remoteness of their locations. The first requires a high degree of mobility of their herds, and in particular secure access to potential areas for the dry season (valley bottoms) or winter grazing. It also requires a well-developed marketing system. Because of
the remoteness of the areas they occupy and their mobility, normal service delivery systems do not reach them and special systems are required.

- **Mixed farmers** use livestock for multiple production activities, such as for animal traction, for organic fertilizer and fuel, and for the production of meat, milk and fiber. The main constraints are the provision of animal health and breeding services and access to markets, in particular for milk.

- **Landless livestock farmers**, often in urban or peri-urban areas, largely feed their animals on residue from arable crops and fodder from communal areas. For this production system, the main constraint is access to credit, as they often have no collateral. Environmental regulations become more important as the level of urban development rises.

- **Intensive production systems**, often located near urban areas because of lower transport cost, can “crowd out” the rural poor if the economic and regulatory framework is biased against the poor, as is often the case. By not requiring intensive production units to cover their pollution costs, and by subsidizing the inputs required by intensive units (such as feed grain imports, artificial insemination services), governments can create an incentive framework favoring large-scale intensive producers.

To develop policies and programs to support livestock development, a diagnosis of the production systems and the incentive and institutional frameworks is necessary. Despite the importance of livestock to growth and poverty reduction, livestock producers and their constraints (especially in the case of pastoral societies) generally are not a significant component of the rural poverty reduction strategy, in part because relatively little is known about livestock production, particularly extensive production systems. Box 15.10 offers a summary of important household, institutional and policy issues to assess in developing pro-poor livestock strategies.

**Policy options**

**Equitable and efficient policy framework**

**Pricing policies.** In many developing countries, prices of meat and milk are kept low to favor urban, mostly wealthy consumers. Progressively reducing price controls will therefore generally favor the rural poor and have only a marginal effect on the urban poor, who consume little milk and meat.

<table>
<thead>
<tr>
<th>Box 15.10. Diagnosis of Livestock Production Systems for Pro-Poor Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Understanding the production system:</strong> Ownership patterns (by wealth class, gender, ethnic group, inheritance rules)</td>
</tr>
<tr>
<td>• Inter-annual variation (rainfall, herd size, movements)</td>
</tr>
<tr>
<td>• Herd composition (species, age/sex composition)</td>
</tr>
<tr>
<td>• Key productivity parameters (mortality of different classes, meat and milk production per year and per animal, feed conversion of commercial production)</td>
</tr>
<tr>
<td>• Inputs used (veterinary and breeding services, purchased feed, vaccinations and other pharmaceuticals)</td>
</tr>
<tr>
<td>• Contribution of livestock to household income, use of outputs</td>
</tr>
<tr>
<td><strong>Understanding the institutional framework:</strong> Resource access—security of access (or tenure) to water and critical grazing areas</td>
</tr>
<tr>
<td>• Producer organizations: orientation, regulations, poverty focus</td>
</tr>
<tr>
<td>• Financial institutions: formal and informal systems involving livestock, in-kind credit systems, use of livestock as collateral</td>
</tr>
<tr>
<td>• Service delivery: Quality of service as assessed by the different user categories, enabling environment for private service providers, acceptance of para-professional providers</td>
</tr>
<tr>
<td>• Marketing: Availability and quality of infrastructure (roads, slaughterhouses), industry concentration</td>
</tr>
<tr>
<td>• Information sources: Mainly through participatory assessments with all stakeholders</td>
</tr>
<tr>
<td><strong>Understanding the incentive framework:</strong> Tariffs and subsidies on key inputs (feed) and animal food products</td>
</tr>
<tr>
<td>• Imports of subsidized (including food aid) animal food products</td>
</tr>
<tr>
<td>• Fee and subsidy levels for veterinary, animal breeding, water and communal grazing</td>
</tr>
<tr>
<td>• Marketing costs and fees</td>
</tr>
<tr>
<td>• Cost of environmental regulations</td>
</tr>
</tbody>
</table>
Cost recovery and privatization of services. The introduction of cost recovery and privatization of livestock services is becoming increasingly common. In diverse countries, including Burkina Faso, Kenya and Madagascar, the majority of cattle are treated by private providers. The benefits from most animal health services (clinical interventions, non-compulsory vaccinations, sale of veterinary pharmaceuticals) and all animal breeding services (selection and multiplication of improved breeding stock, semen production and artificial insemination) can be exclusively captured by the livestock farmer. As a result, these are private goods, which can be more efficiently delivered by private providers, assuming that the appropriate regulatory and cost recovery frameworks are in place (Umali and others 1992).

Cost recovery and privatization leads to more client-directed and adapted systems of service delivery such as the development of systems based on paraprofessionals (for example, veterinary auxiliaries and artificial inseminators). Institution-building investments in private and paraprofessional services have been shown to improve the quality and accessibility of the services for the poor, and the poor have demonstrated willingness to pay. Several studies show that the introduction of charges for services resulted in increased demand for veterinary services in Africa (Leonard 2000) and India (Ahuja and others 2001), although India’s poor were slightly less willing to pay than the wealthier producers.

Internalizing environmental costs. Internalizing the environmental costs of livestock production, in particular of large, intensive industrial production units, can shift the balance to less-intensive production and avert the risk of small livestock producers’ being crowded out. For example, strict controls on the quality of the effluent coming from intensive pig and poultry farms, as imposed in some East Asian countries, increased the price of the meat by about 10-15 percent (de Haan and others 1997), thus increasing the competitive edge of smallholders who operate under a more environmentally benign fashion.

A legal framework that recognizes multi-functionality of land and water assets. For many poor livestock farmers, access to grazing, water and markets is critical for their survival. For the arid areas, mobility of herds and people and access to markets to adjust stock numbers to highly variable climatic conditions is needed. For poor mixed and landless farmers, fodder from the communal areas (road sides, common areas) is also of critical importance. Yet despite the multi-functionality of land in the rural context, legislation is often drafted with a focus on sedentary crops. A related problem is land titling, especially of communally held lands, which—despite the benefits it offers for the land owner(s) and the rural economy as a whole—may lead to reduced access to land and water resources for livestock producers.

Developing adapted land access legislation and promoting feed markets can therefore be of critical importance in creating livestock assets for the poor. Mongolia has one of the most advanced systems of security of access for pastoralists, with comprehensive land legislation, abolition of individual land ownership in pastoral areas, and establishment of appropriate conflict-resolution mechanisms.

Public goods for pro-poor livestock development

Managing risk. With often all of his or her assets tied up in one cow or two goats, livestock producers are particularly susceptible to risk. The main risks are diseases and climatic disasters. Disease risk can be minimized by vaccination campaigns. To mitigate against the effects of droughts, good early warning systems have been successful in ensuring that there is early off-take, which prevents the asset destruction of the poor. The key issues in early warning systems are the design of the system (with the appropriate triggers) and assurance of its maintenance and institutional feedback loops.

Preparing smallholders for a globalizing world. With increasing globalization and the importance of sanitary standards and regulations, an appropriate system of ensuring conformity with these standards, thereby enabling adequate access to markets, is also essential. Capacity building in this area should be an important part of a poverty reduction strategy. While the very poor producers might not be exporting directly, changes in the regulations, often biased toward the large farmers, might affect them negatively. Assessing the effect of food safety measures on the poor livestock farmer (and the consumer) is therefore important.
Targeted interventions for livestock development

Development of adapted financial institutions. Livestock is uniquely suitable for in-kind credit schemes, that is, the provision of live animals to poor farmers who then have the obligation to return a set number of offspring within a given time. Generally, this payback is in kind, but in some cases, it can be monetarized. Prime examples of such schemes exist in Indonesia and with NGOs in Africa and Latin America (Schillhorn).

Strengthening producers’ organizations. Even more than the rural poor in general, poor livestock keepers are often not represented in the policy dialogue, because they are simply not there (mobile pastoralists), are not allowed to participate for socio-religious reasons (women), are of a different ethnic/linguistic group than the majority, or cannot be heard because of another inequality in their society. Providing producers with support to maximize their collective voice and improve access to markets has been shown to be useful, particularly in marketing output and obtaining inputs:

- Pastoral organizations have been rather successful in mobilizing producers around their preferred inputs (animal health, water development) as shown by projects in Senegal, the Central African Republic, Mauritania, and Guinea. They have been less successful in mobilizing pastoralists in resource management, and most associations have not been sustainable after project completion (Baland 1996).
- Production, processing, and marketing organizations are particularly important for perishable products such as milk. They have been successful in Bank-funded projects dealing with the Indian Dairy Cooperative and the Turkish Poultry farmers. Both organizations have been successful in mobilizing large groups of small producers and providing an essential outlet for the produce of rural poor. The Indian Dairy Cooperative model has been mentioned as one of the most successful commodity programs helping to alleviate poverty, with multiple beneficial effects, including nutrition, education (especially for girls), and job creation (Candler and Kumar 1998). Both organizations benefited from strong leadership as one of the critical factors of success.

15.3.7 Knowledge assets: investments in agricultural research and extension

Investments in agricultural research and extension (R&E) can have powerful direct and indirect impact on rural and urban poverty. This section examines the linkages between R&E and poverty and explores options to increase the impact of R&E interventions on poverty reduction.

Knowledge assets and poverty reduction

The effect of research and extension on poverty is both direct and indirect:

- Technological innovation directly increases the output and farm income of producers and/or reduces production and marketing risks that threaten their livelihoods (for example, by breeding for pest resistance).
- Technological innovation indirectly benefits households by: (1) reducing food prices (which is especially beneficial to the poor, who spend a high proportion of their income on food); (2) raising employment and wage rates via increased agricultural production and value-added processing of farm output; and (3) empowering beneficiaries of R&E through demand-driven agricultural research and extension services.

In light of these direct and indirect effects, the poverty impact of agricultural R&E investments is often high compared with other public investments. Recent studies by IFPRI in India and China underscore the relatively high poverty impact of R&E investments by comparing the impact on poverty reduction generated by different types of public investments (Pardey and Beintema 2001 and Haddad and Hazell 2001).
Policy and investment options

This section highlights three elements that are important to maximizing the poverty impact of R&E investments. Targeted strategies are generally required, as the conditions for broad-based productivity-enhancing investments to substantially benefit the poor are generally not in place. The public sector often lacks the resources and capabilities to deliver targeted R&E services to the rural poor, and private and non-governmental organizations will need to step in; in order to stimulate their participation, governments should establish attractive institutional and financial frameworks. To ensure that R&E investments are responsive to the needs of the poor, a participatory approach in the design, implementation and monitoring of R&E services is recommended. Finally, this section illustrates how in some very harsh environments, where farmers have few resources with agricultural potential and/or little access to social and physical infrastructure, investments in agricultural productivity are unlikely to yield significant results.

Broad-based growth versus poverty-targeted investments

A key issue in designing R&E investments for poverty reduction is whether to invest for broad-based productivity growth that provides both direct and indirect benefits to rural and urban households, or whether instead to target productivity investments to the poor in order to ensure that they benefit directly. Experience suggests that in order for the poor to benefit from broad-based investments in agricultural R&E, certain conditions need to be in place, such as:

- relatively equitable land distribution and an agro-ecological base with potential for productivity growth (that is, the farm sector does not have a bimodal structure, with a few large successful commercial farms and many often less successful, smallholder farmers);
- the majority of farmers have access to physical infrastructure and have a minimum level of education and health;
- the poor have access to reasonably well-functioning markets for agricultural inputs and outputs;
- agriculture and farm wages are an important source of income of the rural poor; and
- the urban and rural poor consume mainly non-tradable food staples.

However, often these pre-conditions for the effectiveness of broad-based R&E investments as instruments of poverty reduction are not present. Although past investments in agricultural R&E have had important effects on poverty, the overall poverty impact has often been less significant than hoped. Often, benefits went to wealthier farmers, who may have exerted political pressures to access services; were better able to pay associated costs (that is, travel to fairs, purchase inputs); were more accessible to extension agents geographically, socially and linguistically; were more literate and cognizant of the potential for R&E and how to maximize it; and generally were easier to work with (including such simple things as being better able to offer the extension agent a cup of tea or place to stay).

While there are still opportunities for broad-based productivity enhancing strategies, if poverty reduction is an important objective and if the above-mentioned conditions are not in place, targeted R&E is likely to be less effective in promoting technological advances and poverty reduction. In many situations, it is possible to target R&E public expenditures to the poor by concentrating on crops grown by the poor and by using simple production systems affordable to them (Byerlee 2000). Consequently, the starting point in developing targeted options for pro-poor R&E systems is the poverty and sectoral analysis, which allows policy makers to identify key characteristics of the poor, the overall farm structure, as well as the incidence and effectiveness of past interventions in agricultural technology (box 15.11).

Several examples of program targets follow:

- Geographic regions with high rates of poverty, especially less-favored production areas (hills, rain-fed areas, arid regions), provided there is demonstrated potential to achieve productivity gains. For example, a high proportion of the poor in Vietnam live in upland and mountainous areas, but almost no research institutes are located there or focus on their problems.
Box 15.11. Evaluating the Farm Sector and Effectiveness of R&E Investments

Key questions to help assess the impact of research and extension interventions on the poor include:

- What is the structure of the farm sector?
- What is the impact of the intervention on the major different farm types described above?
- Which types of farms are typically served by which types of institutions (private, public, NGOs, farmers associations)?
- What is the current and potential role of the private sector in serving the more commercial regions, crops, and farmers?
- Is the proposed service cost-effective in terms of cost per beneficiary and impact?
- Will cost-recovery mechanisms to increase sustainability bias services against the poor?
- Are the poor able to participate and are they involved in meaningful ways in program governance and evaluation?
- How can human and social capital development be maximized to empower the poor in setting the R&E agenda?

- Commodities produced or consumed by the poor, especially staple foods and nutritious foods high in micronutrients. For example, in Nigeria a higher yielding disease-resistant cassava was widely adopted, which resulted in a substantial fall in real consumer prices. Since cassava is a staple food of the poor in Nigeria, the poor captured a large share of the benefits.

- Low external input production systems. For example, poor farmers in upland areas of Mexico and Central America have extensively adopted Mucuna, a leguminous cover crop that reduces their need to purchase nitrogenous fertilizer.

- Diversification into high-value, labor-intensive crops and livestock or upgrading of traditional niche products. For example, small farmers in Mexico successfully export organic coffee with the help of local and international NGOs.

- Environmental and natural resource conservation and sustainable use systems important to the poor (forests, pastures, fisheries). For example, beekeeping is often an important niche product of the very poor in Africa. Extension of quality standards and market opportunities directed at beekeepers has the potential to allow these producers to expand into urban, regional and global markets (Christoplos, Farrington, and Kidd 2001).

- More basic science, such as some types of biotechnology, can also be pro-poor, especially if it ultimately reduces vulnerability to pests and climatic risks, substitutes for external inputs, and adds product traits, such as enhanced microeconomic nutrients of importance to the poor.

Where the poor lack access to sufficient land and other assets, or the agricultural potential of those assets is very low, investments in agricultural R&E may have little direct effect on poverty reduction. In some very harsh environments, there is little potential to improve agricultural productivity, and investment in social and economic infrastructure to increase options for off-farm employment will usually provide higher payoffs to investment in R&E.

**Investing in institutional capacity for pro-poor R&E**

Faced with important fiscal constraints on agricultural budgets and the privatization of many agricultural extension services, along with the recognition that their effectiveness had been limited, R&E services advocates saw an institutional (and financial) vacuum emerge. Recently, a number of private, quasi-private, not-for-profit, and community-based organizations have stepped in to fill the gap. Many of the new organizations are primarily or exclusively dedicated to working with poor rural communities, which often had little voice under old institutional structures. R&E services now generally are based on a pluralistic institutional and financing framework under which a variety of public and private institutions are involved in the delivery and financing of R&E services. To support this pluralistic system, sustainable capacity building is critical and will typically rest on developing:

- **institutionally pluralistic** systems that decentralize or privatize services and strengthen client orientation and accountability. Universities, NGOs and producer organizations can often play a special role in meeting the demands of the poor for R&E services. For example, in Nepal, a local NGO has undertaken an extensive participatory crop breeding program with farmers that appears
to be resulting in a sharp increase in adoption of improved varieties that were developed but not released by the public research system.

- **institutional reforms** that employ contractual and competitive mechanisms to improve management and promote efficiency and effectiveness. Many of these mechanisms can be directed toward poverty enhancement. For example, a competitive grants program in Colombia has awarded research and extension grants that give high weight to their likely benefits for poor farmers and landless laborers.

- **financial sustainability** through reforms that improve confidence in public institutions and build political support for R&E, especially from poorer groups. Cost recovery and cost sharing are important to financial sustainability, and even quite poor farmers have shown a willingness to cofinance services when they meet their demands (for example, cofinancing of extension services by small scale farmers in Nicaragua).

- **a sharper focus of government** focused on pro-poor programs. An *expanded role for the private sector* can reduce policy and regulatory barriers and orient programs to market demands. For example, privatization of hybrid maize research should free resources for the public sector to produce open pollinated varieties for poorer farmers and regions.

- **capacity for producer organizations** to integrate user groups into research and extension systems, strengthen technical and managerial capacities, and encourage inclusion of women and the poor. For example, farmers in Mali have received support to organize and contract in adaptive research according to their demands.

**Encouraging participation**

Participatory strategies for program design, implementation, monitoring and evaluation are important to ensure the appropriateness and poverty focus of the R&E investment (Salmen 2000 and Alex and Byerlee 2000). They also help to build capacity of individuals and local institutions and encourage demand for services where there has been little in the past (box 15.12). Participatory strategies for R&E must also be pro-active in reaching out to all groups of the poor. Typically women have much less access to extension information and less influence on technological innovation than do men. Pro-poor extension services need to emphasize facilitation approaches in which the farmers and extension agents jointly identify and seek solutions to problems and opportunities. However, these approaches require extension staff able to deal with multi-disciplinary problems and different agencies, and often extensive staff training programs in participatory techniques are required to ensure the program’s effectiveness.

**15.3.8 Social assets: social capital for rural poverty reduction**

Social capital, marked by the strength and cohesion of a given community, is a crosscutting resource that can facilitate and improve access to and the strength of the other forms of capital (natural, physical, financial, and human). This section examines the three types of social capital and provides several examples of how social capital can assist households in accessing other resources and assets. It is difficult to positively affect social capital from outside a community and, in fact, outside efforts may often negatively affect existing social capital. The final section identifies three approaches that can help foster the development of social capital.

**Overall framework – how does social capital affect opportunities for poverty reduction?**

Social capital can lead to positive externalities, such as financial and emotional support from one’s religious community, information about potential jobs, a reduction in transaction costs across firms, or collaboration across organizations to educate people about their rights and improve voter turnout. Social capital is also a critical factor in the sustainability of development projects because it values
Box 15.12. Farmer-Run Research: Experience with the CIALs

Turning responsibility for on-farm testing over to farmers is an attractive alternative that has been extensively used by CIAT (International Center for Tropical Agriculture) in several countries in Latin America. Under the CIAL (Local Agriculture Research Committees) program, begun in 1990, an institution with interest in technology dissemination (usually a state agency, NGO, or cooperative) facilitates a meeting in which a community analyzes potential needs for local technology testing. If the community is interested in undertaking local research, it selects a four-member committee (the CIAL) from the community to coordinate the research work. Outside technical staff from the organizing institution assist in planning and analysis of research trials and a paraprofessional (a CIAL-experienced farmer) monitors and advises on the research. Technical staff visit 2-3 times per season after the first 2-3 seasons. CIALs operate with a small fund (US$500 per community) to cover the risks of crop failure or to subsidize the costs of trials. These CIAL funds have been consolidated into a corporation at the national level, but each CIAL manages its own fund. The funds, like the whole program, are “owned” by the community and managed by the committee.

Source: Ashby and others (2000).

relationships among various stakeholders and anticipates possible breakdowns in cooperation or abuses by certain parties. However, social capital can also have negative consequences and lead to nepotism, corruption, ethnocentrism, and/or stringent social controls (Portes and Landholt 1996).

Social capital has various forms and functions that influence rural development.\textsuperscript{35}

- **Bonding social capital** refers to tight-knit, homogeneous groups of people that provide important safety nets for one another in times of crisis.

- **Bridging social capital** refers to horizontal networks of more heterogeneous people or groups that enable members to access additional, diverse resources and information. This access translates into more productive livelihood investments such as credit, technical support, jobs or market information. Examples of bridging networks include professional associations that span ethnic groups or political groups that bring together assorted constituencies to achieve common goals.

- When civil society and the state form effective vertical relationships, it is referred to as **linking social capital**. Communities can be linked to additional formal resources such as information, services and funding (for example, when rural families are connected via local agricultural extension workers). Linking social capital is particularly important for development because without relationships with formal institutions, poor people are unable to influence public policies and programs. These relationships are critically important for government as well because the knowledge and input from local communities make government efforts more successful. Local input often reduces the costs of government services and improves sustainability.

The poor are often well-off in terms of bonding social capital, but weak in bridging or linking social capital.\textsuperscript{36} For example, in Mexico, while indigenous communities have strong social solidarity and horizontal decisionmaking, they are still among the poorest in Mexico (Fox 1996). This solidarity helps them cope during tough times but, without links to formal institutions and resources, indigenous communities cannot channel their organizational capacity into significant and sustainable political and economic opportunities.

Several examples of how social capital can be used to foster development are provided below:

- **Land and common property management.** Social capital enables collective action and can help people build and manage common property resources, such as land and fresh water wells (Ostrom 1990). Natural capital or common property resources are subject to exploitation by those with superior access. Strong community groups can play direct or indirect supervisory roles, ensuring that there is equal access to communal property and shared natural resources. Social cohesion improves the information flow within the community and thus helps to identify individuals who use common resources irresponsibly or exploit them at the expense of others (Bebbington 1999). Experience with rural water users associations across countries indicates that maintenance is more efficient and programs more likely to be sustained if users are empowered to play a substantial role in running the systems.\textsuperscript{37, 38}
• **Rural infrastructure maintenance.** Social capital can support rural infrastructure development through the mobilization of government resources and through local efforts to build and maintain it. Community maintenance programs can be critical to ensuring that rural roads remain passable. Without the monitoring and evaluation by like-minded rural inhabitants, public goods are subject to free-riding (Narayan and Pritchett 1998).

• **Finance.** Social connections play a critical role in obtaining credit for poor rural families, though the role of social networks becomes less important as borrowers seek larger and larger loans (van Bastelaer 1999). Where formal financial institutions are absent or weak, some poor communities have devised their own mechanisms for pooling resources and lending money to those who need it. In some cases “social collateral,” a borrower’s reputation or social networks, serves in the place of the physical collateral that so many poor rural families lack.

• **Marketing.** Social capital, networks and local institutions help to pool resources and build better links to markets and trade policy making. Examples of this are Rural Producers Organizations (RPOs), agents of the private sector, which also serve as vehicles for linking otherwise isolated and powerless producers to the formal resources, institutions and decisionmaking bodies of society (Rondot 2001). For RPOs to flourish, governments must allow collective action and foster legal frameworks that recognize the RPOs and facilitate their operation.

• **Information.** Local social structures affect how information is diffused and whether or not new methods are adopted and increase production. Evidence shows that this is indeed true when it comes to fertilizer adoption in Tanzania. Isham (2002) finds that group homogeneity, leadership heterogeneity and participatory norms can promote rapid diffusion of agricultural technologies that, in turn, help improve household income and well-being. Barr (1997) also finds that in Ghana social networks mediate access to information that can lead to differences in productivity among enterprises.

• **Risk mitigation and coping.** The presence of local associations and networks enhances the ability of poor villagers to allocate resources efficiently and increases their resilience to hazards. This is especially important because many women are not involved in the formal sectors and, as a result, are often locked out of information that may help them survive and/or thrive. While such networks are essential, they are often poor substitutes for formal insurance mechanisms that should be available through the state or market (see risk section below). Social capital also encourages risk taking and thereby engaging in activities with higher rates of return. Findings from *Cents and Sociability: Household Income and Social Capital in Rural Tanzania* indicate that social capital is associated with increased income in part because social cohesion at the village level encourages individuals to take risks that will help them be more productive and build their stock of produced capital (Narayan and Pritchett 1998).39

**Policy options**

It is difficult to positively affect social capital from outside a community because indigenous norms and networks are deeply ingrained. In fact, it is relatively easy for outside efforts to negatively affect existing

---

<table>
<thead>
<tr>
<th>Box 15.13. Key Questions to Assess Impact of Investments on Social Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whose idea is being developed/implemented?</td>
</tr>
<tr>
<td>2. Who are the stakeholders? Who is participating?</td>
</tr>
<tr>
<td>3. What are some of the shared interests/goals?</td>
</tr>
<tr>
<td>4. Where is the accountability? What are the mechanisms and in which direction do they run?</td>
</tr>
<tr>
<td>5. How will the impact/success be measured?</td>
</tr>
<tr>
<td>6. Who chose the indicators? Who is qualified to measure the indicators?</td>
</tr>
<tr>
<td>7. Where are there opportunities for learning and adapting the program?</td>
</tr>
<tr>
<td>8. Who will benefit?</td>
</tr>
<tr>
<td>9. Might there be any losers? Who?</td>
</tr>
<tr>
<td>10. Are they participating in this process?</td>
</tr>
<tr>
<td>11. How and when will information about this project be shared?</td>
</tr>
<tr>
<td>12. Is there space for outsiders (indirect stakeholders) to give reactions/input?</td>
</tr>
</tbody>
</table>
social capital, and as a result, direct efforts to develop social capital should be approached with caution. For example, when a dam is built, communities may be displaced and members forced to scatter, losing decades-old social organizations and support systems in the process. However, there are ways for governments and other actors to foster enabling environments in which social capital can thrive. There are also ways to minimize possible unintended negative social capital outcomes by promoting transparency and accountability.

Important first steps are to assess the existing levels of social capital (technical note L.4) and to evaluate the impact of the proposed intervention on existing social capital (box 15.13). Specific recommendations to foster the development of social capital include fostering transparency and access to information at the local level, encouraging inclusion and participatory approaches, and strengthening existing organizations.

**Fostering transparency and access to information**

Access to information is important, since informed citizens are better equipped to take advantage of opportunities, access services, monitor their leaders and exercise their rights (Woolcock and Narayan 2000). Some options to foster access to information are to:

- post public information, such as village budgets received from the state and current expenditures (some village leaders post such information in the center of the village so all the community members can monitor what is happening); prepare a phone book of government offices and services to help citizens locate the appropriate place for services;
- engage the media (print, TV and radio and the Internet) to keep the population informed. Other popular forms of media can include traveling theater troupes that inform rural people of their legal rights; and,
- ensure mechanisms are in place to allow for the local population to participate in resource allocation decisions and to track actual expenditure uses, especially when decentralization has occurred.

**Inclusion and participation**

Inclusion and participation can be encouraged by:

- including poor people and other excluded groups in decisionmaking to ensure that public actions build on local knowledge and priorities, and investing in bringing rural representatives into the decisionmaking fora or sending agents into rural areas to collect input on local people’s opinions and priorities (be sure to inform them of any subsequent decisions or action);
- building bridges across ethnic, religious, caste, gender, and socio-economic divides (this knowledge and familiarity with other groups can help diffuse potential future times of ethnic or political tensions); and
- holding regular village meetings in central public spaces and including all members of the community, as this sends an important signal that decisions are being made in a transparent way and provides community members opportunities to voice concerns as well as share good news on development issues.

**Support local organizational capacity**

Local or community-based organizational capacity (marketing organizations, local infrastructure maintenance groups, community councils) can support productive activities and can facilitate the management of public goods and the transparent allocation of public resources at the local level. The challenge is to develop local organizations from the bottom up. Experience has shown that organizations formed to capture external resources do not last over time. Advocates can support local organizational capacity by:
• building ties with isolated populations to help them develop the skills and motivation necessary for them to build local organizations or expand the capacity of existing indigenous organizations;
• using local community facilitators to help citizens identify and prioritize common goals;
• providing training and technical assistance to give local groups the capacity for planning, management and independent monitoring of public budgets and performance; and
• encouraging sector agencies to develop strong relationships with community-based organizations, helping to build local skills and receiving inputs to render government efforts more effective (Woolcock and Narayan 2000).

15.3.9 Risk management in rural areas

This section examines options to assist rural households to better manage risk. In particular, it concentrates on market-based and social protection initiatives, since many of the other policy options are covered above (for example, water, research and extension, microfinance, health and education, and infrastructure). It complements chapter 17, “Social Protection,” which covers how to assess the sources of risk and vulnerability and the current coverage and quality of social protection programs, as well as criteria to develop a successful social protection program, and indicators for monitoring and evaluating social protection programs.

Risk and rural poverty

Rural households face significant levels of risk, yet have limited public and private instruments to cope with income fluctuations. The heavy reliance on agriculture exposes many rural households to high levels of risk from climatic forces, plant and animal disease, price fluctuations and policy reforms. Also, rural households have significant health risks (for example, malaria, river blindness, HIV/AIDS).

Many rural communities rely on informal mechanisms to cope with risk (for example, informal capital, land and labor sharing arrangements, remittances, extended family and community networks, traditional money lenders, livestock/grain exchanges). However, these mechanisms work best when the shock is idiosyncratic, and they tend to fail under a protracted and severe crisis or covariate risk, where an entire community or region is affected. In addition, many of these informal mechanisms are not available to poorer households to cope with risk, as they are based on reciprocity (Morduch 1999; World Bank 2000a).

Faced with high levels of risk and limited instruments to manage this risk, many poor rural households fall into a poverty trap. In order to survive in case of shocks, poor rural households are often forced to sell livestock and other productive assets—which substantially reduces their income-generating capacity in the future and locks them into perpetual poverty—or suffer increased malnutrition. Also, many poorer households fall into a poverty trap by engaging in low-risk but also low-return investment strategies (such as cultivating basic grains instead of potentially more profitable vegetables, or shunning the use of improved varieties that are more vulnerable to unfavorable rainfa ll outcomes). Poor households may further find themselves without the means to adjust to and take advantage of new price incentives that result from price and trade liberalization.

Policy options

Social protection for rural space

Social protection policy assists households to cope with risk from short-term income fluctuations as well as long-term risk from chronic poverty (the sick, the elderly and handicapped, and those households with almost no assets). Key social protection programs include: pensions and cash transfer programs, insurance (crop, health, unemployment), labor-market interventions, public works, food subsidies and food transfers. Unfortunately, many social protection programs are difficult to implement in the rural context for two broad sets of reasons:
• Social protection programs are difficult and expensive to implement in rural areas, because of high transaction costs (resulting from low population density and low levels of basic infrastructure and social service provision) as well as the large share of the population to be reached.

• The prevalence of informal employment in rural areas makes it difficult to collect beneficiary contributions for pension programs, regulate wages and working conditions through labor-market regulations, or collect reliable and accurate household income data necessary to target safety-net benefits.

The most common SP interventions in rural areas have been public works programs, food security initiatives and, more recently, cash and quasi-cash transfers. Best practice from these three types of programs is summarized below.

**Public works programs** provide a fast cash or food injection among able-bodied beneficiaries, create infrastructure and are self-targeting through the wage rate, which is slightly below market rates. These programs can be operated on a continual basis or in response to natural calamities. Thus, low-income individuals faced with natural disasters, poor climate conditions or general economic downturns can seek employment in accord with their need, and exit when other opportunities arise. The public works programs also, by drawing labor away from other activities, can provide an indirect benefit and lead to higher overall rural wages. Good examples of such public works schemes include the Maharashtra Employment Guarantee Scheme (EGS) with an average monthly participation of half a million (1975-89), and the Bangladesh Food for Work Program, which was of comparable size in 1990 (Dreze and Sen 1989).

The initiatives are best seen as risk-management programs, as the quality and usefulness of the infrastructure provided may be low. Part of the difficulty has to do with the inherent tension in trying to achieve two goals with a single instrument. The poverty-reduction and risk-management goal requires as high a share of unskilled labor costs in total expenses as possible, while the infrastructure construction goal would entail a higher share of skilled labor and non-labor costs in order to secure higher quality outputs. Public works programs also involve high administrative costs, as the infrastructure projects must be overseen and financed, and exclude those not able to work (the aged or ill, young children, mothers although some programs have introduced daycare options for parents of young children. These concerns underscore that the design features of the programs are critical to their success.41

**Food security initiatives** are critical instruments of risk management for both rural and urban areas. Traditionally, many developing country governments have sought to support the rural sector and ensure food security with agricultural subsidies and trade protection. Yet these mechanisms often have hurt or failed to benefit the poor and have created considerable market distortions and administrative costs (box 15.14).

<table>
<thead>
<tr>
<th>Box 15.14. Trade and Price Policies to Support the Agricultural Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditionally, many developing country governments sought to support the rural sector with agriculture subsidies and trade protection. The overarching objective of these policies was national food security, although the need to protect farmers from price fluctuations was often used to justify price and trade controls, along with the greater administrative ease of market interventions (Alderman 2000). Nonetheless, government intervention in agriculture often has had a negative impact on farmers, as governments taxed farmers directly or indirectly in an effort to use agriculture revenue to finance development (Krueger, Schiff and Valdés 1991). In addition, market interventions were distortionary; the benefits accrued to the larger farmers with a marketable surplus and carried strong administrative costs, as they often involved the use of parastatals and consumer subsidies. Finally, these policies focused on agriculture and not the rural sector as a whole and were not conducive to the balanced development of rural areas.</td>
</tr>
</tbody>
</table>

There are three pillars of food security policy. The first ensures adequate supplies or availability at the national level. The second increases and ensures household access to or purchasing power for food products. This can be done by cash transfer programs, distribution of food aid, targeted food subsidies (such as Mexico’s tortibono program, in which households had key cards that allowed them to purchase tortillas at subsidized prices) and generalized food subsidies. Targeted cash transfers to households are more efficient than direct food distribution, as they do not undermine private marketing chains. In most situations, cash transfers will allow the recipients to purchase food using normal market channels,
although in famine situations, it may be necessary for outside agencies to transport food to remote areas. Universal food subsidies are very unlikely to be financially viable. They are often also difficult to scale back once acute needs have diminished.

The third pillar of food security, improved *utilization*, can achieve a reduction in the number of malnourished individuals residing within food secure as well as food insecure households. Improved utilization can be achieved through nutrition and health interventions as well as through programs that improve the status of women. Improving food utilization can be a part of all food security initiatives. Indeed, nutrition policy misses the mark when it equates food access with improvements in nutrition. Since the nutrition of a child reflects the interplay of food consumption, health status, and child care, promising avenues for nutritional improvements include a range of services that address whichever of these factors is most limiting. For example, one of the most innovative recent interventions in nutrition, Atencion Integral a la Niñez Comunitario in Honduras, eschews food transfers and concentrates on regular weighing of children as an entry point in information sharing among the community. Similarly, analysis of malnutrition in Ethiopia shows that changes in community knowledge about nutrition or women’s education could have as much as or more impact on nutrition as plausible changes in income or food prices (Christiaensen and Alderman 2001).

*Cash and quasi-cash transfer programs* for the poor and vulnerable face special challenges in rural areas due to the difficulty in finding targeting criteria that can be easily monitored and high costs of administering programs in communities with low population densities and undeveloped infrastructure. Many of the most successful programs in rural areas, such as Mexico’s PROGRESA and South Africa’s Old Age Pension, are administered in middle-income countries, where there are more budget resources for safety net programs and a better social and economic infrastructure in rural areas (box 15.15).

However, cash transfers and quasi cash transfers (for example, vouchers for inputs) do help raise incomes and may also have a multiplier effect, as they facilitate household investments (Wodon and Cord 2001). The multiplier effect may reflect the lifting of capital constraints faced by many households or an increased proclivity to invest (or to invest in high-risk activities, which could deliver the risk-reducing impact of a long-term income transfer program); or it may reflect a consumption multiplier due to the injection of cash into the local economy. In addition, if linked to health-center visits or school enrollment, the cash transfer programs can generate significant long-term increases on beneficiary income. Cash transfer programs are also more cost-effective and efficient than the subsidy programs they are replacing (box 15.16).

The high costs of transfer programs may be lowered by relying on existing NGOs in rural areas to distribute the benefits, private retail outlets (for example, Malawi’s starter pack program and Romania’s input vouchers), or government extension workers (Mexico’s PROCAMPO) (Cord 2000). However, existing infrastructure in many rural areas is weak, and therefore those households residing in remote areas may be excluded. Another option to reduce the cost of cash transfers is to provide *transitory*

---

**Box 15.15. Mexico’s PROGRESA and South Africa’s Pension Program**

PROGRESA and South Africa’s social pension program appear effective in assisting poor households to manage risk and improve their welfare. In addition, both programs were economically efficient in that they did not distort market signals and benefited from strong political support. Both programs also reduced poverty rates, although over the longer run, PROGRESA is expected to have a larger impact on household income due to the investments in education and health associated with the program. The main drawbacks to the two programs are the high incremental costs of both programs and, in the case of PROGRESA, its reliance on health, education and road infrastructure which suggest that their replicability in very poor developing countries may be difficult. Also, the reliance on government services and the road infrastructure may lead to the exclusion of very poor households in areas remote from program benefits even in middle-income countries (Cord 2001).

The poorest countries with the greatest need for poverty programs also have the greatest need to be selective, as they face more limited financial means. To illustrate, consider a program in Mozambique that is of the scale of South Africa’s largely rural Old Age Pension, that is, one that transfers 1.5 percent of GNP to roughly 20 percent of the households. In an economy as relatively well off as South Africa, and with the skew in its income distribution, this transfer increases household incomes of recipients by 50 percent. In contrast, a transfer of 1.5 percent of Mozambique’s substantially lower GNP would only add 15 percent to the incomes of its beneficiaries.
Box 15.16. When Cash Transfer Programs Replace Subsidies

While the costs of cash transfer programs are high, if they are used during the transition period following privatization or liberalization programs, the incremental costs can be small compared with the costs of the subsidies and parastatals. Moreover, cash transfer programs have a greater transfer efficiency, as they have lower administrative costs, the potential for fewer leakages and low transactions costs for beneficiaries. Also, the programs offer efficiency and fiscal gains compared with subsidies. The cash transfer programs do not affect market signals and also provide more predictable expenses as opposed to price and trade interventions, which vary according to production, marketing costs and world prices (Cord 2000).

assistance to prevent destitution in the face of an income loss. It is, however, a challenge to design publicly funded programs to stabilize income or consumption without creating inducements that encourage risk taking, and which have a clearly defined exit strategy. Cost-effective income stabilization programs, however, are not completely unprecedented. For example, subsidies to livestock transport in Kenya have successfully prevented price collapse during a drought and, thus have served as insurance for pastoralists.

**Market based mechanisms for risk coping**

**Insurance.** While savings allow the poor to cushion for future events or emergencies, microeconomic insurance offers a way to manage specific risks by sharing the cost of unlikely events among many poor households. Microfinance institutions are now paying more attention to household insurance, but credit cooperatives have offered forms of life and health insurance for years, and informal burial societies have operated in most developing countries for generations.42

Like savings, direct provision of insurance services requires significant skills and systems, as well as institutional permanence. For this reason, NGOs can be effective in assisting poor households to gain access to the services of strong and established insurance companies. FINCA, an NGO operating in Uganda, acts as an agent for a formal healthcare plan in order to bring health insurance to FINCA’s clients.43

However, insurance may be most useful in those situations where it is also most difficult to implement, such as areas at high risk of natural disasters, or more recently, in populations suffering from HIV and AIDS. Unfortunately, insurance is a weak instrument for addressing community-wide risks, which is disappointing for those seeking to help the poor with the financial burden of these crises.

**Commodities and futures markets.** In many industrial and newly emerging countries, farmers have the opportunity to use various marketing arrangements to reduce price risks for commodities not yet produced, or for inputs needed in the future. The most important alternatives, from a risk-management perspective, include cooperative marketing with price pooling, forward contracts for commodity sales or for input delivery, and hedging on futures markets. Analysis has suggested useful possibilities for futures trading to assist in risk management in diverse circumstances, such as wheat marketing in Pakistan and coffee marketing in Costa Rica.

**Market information services (MIS).** Knowledge of market information tends to reduce the risks and lower the transaction costs of participating in the market. These efficiency gains can lead to increased participation in the markets and greater stability of prices and supply/demand. Improved information enables farmers to plan their production, harvesting, and selling according to market demand and in some cases to choose the optimal marketing channel. Market information is also a necessary part of Early Warning Systems that can identify potentially dangerous food shortage trends.

**Other programs to assist rural households in risk management**

Many other public interventions directly reduce the riskiness of rural incomes. These are briefly recapped below, given their importance in risk management and income stabilization:

- **Irrigation and water control investments** add both to the average level of production and to the stability of yields.
• **Rural infrastructure investments** (in particular roads as well as telecommunications) assist in market integration in a manner that increases overall income-earning potential and reduces the impact of local production conditions on price fluctuations.

• **Access to reliable information** significantly reduces uncertainty in a risky world. A key to enabling rural residents’ access to reliable information is the availability of and the ability to utilize telecommunications networks and rural roads.

• **Rural microfinance initiatives**, in particular credit, savings and insurance programs, enhance income security and facilitate investment.

• **Research and extension efforts** disseminate plant varieties that are more resistant to pests and diseases and to abiotic stresses associated with natural phenomena such as droughts and floods (Anderson 2001).

• **Food distribution and fee waivers for education and health services** can be quite effective in supporting the rural poor, who have limited access to these services. However, these programs are also limited in rural areas by the limited network of social services (chapter 17, “Social Protection”).

In the aggregate, the initiatives reviewed in this chapter can assist the rural poor to better manage the high level of risk that characterizes the rural environment. Many of the interventions described above are useful not only in ensuring that basic needs of rural households are met, but also in helping them to better manage their natural, physical, and financial assets to increase their incomes over time.

**Notes**

1. For a fuller discussion of the linkages between agricultural growth, and rural and urban poverty and growth, see Johnson and Mellor (1961) and Timmer (1995).

2. For example, a detailed study of rural poverty in Northeast and Southeast Brazil revealed significant heterogeneity in welfare indicators and income sources among the rural poor. The rural poverty reduction strategy developed on the basis of this study was framed in terms of an integrated set of policies to provide multiple paths out of poverty, tailored to the heterogeneous cross section of poor rural household groups (World Bank 2001).

3. Chapter 2, “Inequality and Social Welfare,” provides detail on methods to assess the distributional impact of government programs, while chapter 6, “Public Spending,” presents tools to assess the flow of public expenditures towards the poor.

4. For information on the various tools available to assess the poverty and distributional impact of pricing, marketing and public expenditure policy, also see World Bank (2002).

5. For more information on beneficiary assessments of agricultural extension services, see Salmen (1999 and 2000).


7. There are four strategic areas for attention in planning for participation in PRSPs: poverty diagnostics, public expenditure management, policy formulation and implementation, and monitoring and evaluation. These four areas are described briefly in section 7.3 of chapter 7, “Participation,” and then explored more fully in section 7.5 of the chapter. The chapter also provides guidance on planning for participation and features case studies illustrating the growing toolkit of participatory methods and their importance to more relevant and effective efforts to reduce poverty, including in rural contexts.


10. The diets of the rural poor are closely related to the agricultural season. Many micronutrient-dense foods such as green leafy vegetables and fruits are only available at certain times of the year and, hence, seasonal deficiencies may be more common among poor rural residents.

11. These projects have encompassed various combinations of services, including growth monitoring and growth promotion of children, nutrition education for mothers, home visits, subsidized weaning foods, supplements for pregnant and lactating women and reference to health facilities for severely malnourished or sick children. The success of these projects has been attributed to their decentralized nature, their use of a mix of services and subsidies, their focus on prevention and learning by doing.


13. This scenario is mirrored in the organizational structures of many international aid agencies.

14. Notwithstanding conventional assumptions, there is also strong evidence of the advantages (quality and cost-effectiveness) of community ownership of low volume roads through local roads associations (Malmberg-Calvo 1998).

15. In Uganda, a recent household survey found that land made up more than 50 percent of households’ assets. Moreover, liberalization appears to have increased returns to households’ endowments of physical and human capital, implying that initial asset ownership was an important predictor of income growth and the ability to escape poverty over the 1992-2000 period (Deininger and Okidi 2001).

16. A recent study estimates that in India, land market distortions reduced annual economic growth by close to 1.3 percentage points (McKinsey 2001; http://www.mckinsey.com/knowledge/mgi/reports/india.asp).

17. Estimates for South Asia indicate that about 30 percent of the incomes of the poorest are still derived from common property resources (Beck and Nesmith 2000).

18. In addition to discouraging speculation, land taxes provide essential revenue to local governments to provide infrastructure and other services more effectively and at the same time impose fiscal discipline at the local level.

19. In many African countries, customary land tenure arrangements have only very recently received recognition by the law (Alden Wiley 2001).

20. This creates the possibility that multiple owners may have legitimate claims to the same piece of land, depending on the law used. The court system is normally unable to handle these cases quickly, with potentially severe impact on much-needed investment.

21. In Mexico, a dedicated and decentralized system of agrarian justice with a staff of more than 5,000 has already spent more than six years without being able to fully clear the backlog of cases that had accumulated up to 1992 (World Bank 2001).

22. In Zambia, the fact that the market for surveying was tightly monopolized by a “cartel” of only six registered surveyors implied that it took years to get a survey done; the survey was a pre-condition for obtaining land title (Moll 1997). For many countries in Eastern Europe and the FSU, high notary fees (of up to 20 percent of the value of the land) provide a severe disincentive to physically register any form of land transaction, including the physical identification (and possibly subsequent withdrawal) of individually owned but collectively cultivated plots (Giovarelli and others 2000).

23. Even though land rights are not fully transferable, the case of Mozambique, where communities have to give their consent to any investment project, is a good example of how this can be achieved.

24. Note that such grants are often very high in “expropriative” land reforms.

25. Free of political interference where land rights can, for example, be withdrawn if the land is not efficiently used.
26. “Microfinance” refers to provision of financial services—loans, savings, insurance, or transfer services to low income households (CGAP 2001). This note draws extensively on CGAP (2001) and Charitonenko (2001). For more information on CGAP and its resources for microfinance institutions see http://www.cgap.org.


28. Longer term subsidies may be warranted for pre- and post-transaction activities, such as product development, market surveys and impact measurement.

29. See Stuart Rutherford’s *The Poor and their Money* (Rutherford 2000) for a further explanation of the savings strategies employed by the poor.

30. For more information, see Brown and Nagarajan (2000).

31. These guidelines are informed by an internal background paper written by William Steel (Steel 1996) for the World Bank’s rural strategy document, “Rural Development: From Vision to Action.”

32. In addition, several other recent developments also favor more targeted productivity-enhancing strategies. The growing importance of private investment in R&E for commercial agriculture has freed public resources for poorer farmers and marginal areas. Also, the liberalization of trade has integrated global markets and reduced the effect of productivity growth on domestic food prices, while at the same time has opened new opportunities to develop high value crops in specific locations, thereby reinforcing the need for targeted R&E services.

33. The poor may have no time to participate in programs or be unable to assume the risk or financial costs of new innovations.

34. Cultural capital defined by the cultural practices that are meaningful in given communities may also be an asset. Cultural capital is unlikely to survive unless the strength of social capital carries it forward from generation to generation (Bebbington 1999).


38. Water and sanitation associations are now widely recognized as innovative participatory methods of delivering water and sanitation services to rural communities. Service delivery is based on local demand and can be tailored to specific needs. The formation of these associations requires that there be at least minimal social cohesion in the local community. (World Bank Technical Paper, “Users Organizations for Sustainable Water Services.”) Water user groups can serve as the village-level forum where beneficiaries resolve conflicts, monitor progress, select resource people and trainers, and maintain the infrastructure they have built. (Dorst, Steve, World Bank Land Management Web site).

39. See also example of Six-S in Burkina Faso, which is a loose federation of rural organizations supported by more formal international NGOs (Uphoff, Esman and Krishna 1997).

40. This section draws on discussions found in Esman and Uphoff (1984), Fox and Gershman (1999), Narayan (1999), Narayan and others (2000a and b), Narayan (2002), and Woolcock and Narayan (2000).

41. Subbarao (2001) provides a good overview of the issues involved.

42. For more information, see Brown and Churchill (1999 and 2000).

43. On approaches taken by microcredit organizations to facilitate access to insurance, see McCord (2001).
Bibliography and References

Integrating rural poverty into the PRSP process


Health and education


Infrastructure


Land


**Water and irrigation**


**Rural financial markets**


**Livestock**


**Research and extension**


Social capital


_Annual Review of Sociology_ 24.


**Risk management**


