The key to sustainable rural development is legally-secure entitlement to assets – land, water, credit, information and technology – on the part of the poor. Without secure property rights, farmers lack the incentive to invest in land management.

**Asset poverty: scope for rural poverty reduction through policy changes**

This chapter deals with various strategies to improve the asset holdings of the rural poor. In most cases, if the poor get a bigger share of asset control or benefits, efficiency and economic growth also improve. For many types of asset, reducing inequality between rural and urban areas slows down out-migration to the cities, and increases rural farm and non-farm income-earning opportunities.

Well-targeted policies can reduce poverty by increasing the opportunities for poor people to gain and maintain secure access to productive assets, especially land, water and other natural resources, together with social assets such as extension services, education and basic health care. The nature of their tenure over productive assets and related factor markets has a direct bearing on the extent of lasting benefit and opportunity for the rural poor to improve their livelihoods.

Assets take various forms and can be owned in various ways. Since this diversity has implications for the way assets are acquired and used sustainably, it is important to define the various meanings of ‘asset’ in the context of the rural poor (Box 3.1).

Lack of assets is an effect as well as a cause of poverty in terms of income opportunities, consumption and capability-building of people and their own institutions.

The term ‘asset poverty’ indicates a vicious circle. People without assets tend to be consumption-poor because they rely mainly on selling their labour in poorly paid markets or to the landed class, have nothing to sell or mortgage in hard times, and are economically dependent and politically weak. Apart from the link between lack of assets and consumption poverty, asset disparities are huge.

Rural rich-poor total asset disparity. In rural India in 1971-72, the average household in the top decile owned 294 times as many natural, physical and net financial assets as those in the bottom decile. The average person in the top rural decile owned almost 400 times as much assets as a person in the poorest: over eight times the disparity in income.

Rich-poor specific disparities. In the median country of 41 developing countries with appropriate surveys, below half the children aged 6-11 from the poorest fifth of households were in school, as against over 90% in the richest fifth. In Ghana, in the richest quintile, two households
in three have electricity, as against one in six in the poorest quintile.

Urban-rural asset disparities. The ratio of rural to urban illiteracy among persons over 15 in the early 1970s ranged from 1.4 to 2 in North Africa and Asia, and 2 to 3.5 in Latin America. In the following 10–20 years the disparity increased in all 24 cases (male, female and total, for eight countries with data) in Asia; in 15 of the 16 cases in Latin America; and in ten of the 15 cases in Africa.6

Complementarity and sequencing in assets reform are crucial to maximize benefits to the poor. For instance, their nutrition is usually advanced more cost-effectively by combining efforts on nutrition, health, water and education than by concentrating on only one asset.

Efficiency is improved by the participation of beneficiaries, including poor ones, in the ‘project cycles’ where specific activities focus on building up their asset base. The inclusion of women in civil society, encouraging their training in health issues, and participation in education and financial decisions can only improve efficiency. However, the goal must be to progress from participation to empowerment, so that the rural poor become effective interlocutors with their governments and local authorities in decision-making that affects their resource entitlements and livelihoods.

Improving the assets of the rural poor has multiplier effects on the rate of economic growth.7 The rural poor have frequently been excluded from access to land and other resources owing to the

---

**Box 3.1: Assets: definition; ownership, control and benefit; gain and loss; and outcomes for the rural and the poor**

**Definition:** An asset (also called ‘capital’, ‘stock’, or ‘endowment’) is anything that can be used, without being used up, to increase regular returns above receipts from labour, whether hired or self-employed, and thus enhance producers’ income or consumers’ welfare. Typical assets are land, wells, cattle, tools, houses, shares, skills, health and roads.

**Access, ownership, benefit:** Assets can be owned individually, by a group (such as the common grazing land of a village), by the state, or on an open-access basis where there are institutional understandings governing use but no one institution has control over access. People can control assets (by rent, hire, or influence in family, village or polity) without ownership, and can benefit even from assets controlled by others (when using a road, or earning at a sugar-mill).

**Gain, loss:** People gain assets by: diverting income from buying food to saving for a plough; diverting effort, for example, from growing rice to digging wells or attending school; theft or fraud; or luck – often inheritance, or an appreciation in the value of what one already owns. One loses assets by physical depreciation (through non-maintenance of assets), environmental depletion or pollution; obsolescence; theft or fraud; or sale or mortgage.

**The poor’s assets:** (a) The poor are hard pressed to gain assets. Much income and work are committed to basic consumer needs (and social obligations). Inheritances are small and rare. (b) The poor readily lose assets. In hard times they must often sell or mortgage them, to avoid even deeper transient poverty. (c) Indeed, if the poor do save, their vulnerability often leads them to put their savings into assets that, though low-yielding, are readily sold in crisis; or into other safe but low-yielding production assets; or even into zero-yielding stocks of food grains against a shortage.

**Rural people’s assets:** Rural people have more ‘rural-specific’ assets (farmland, livestock, irrigation) per person than urban people, but fewer human, infrastructural or total land assets, and fewer assets overall. Often the consumption-poorest urban quintile is healthier and better educated than the middle rural quintile. Further, the agriculture-based rural poor are especially vulnerable to climatic stress and hence make forced sales of land or animals; they concentrate where land and water are environmentally vulnerable.

**Upshot for the rural poor:** Characteristics of the rural poor include low levels of assets, especially land, labour and human assets such as health, education and nutrition. Though countries differ greatly, urban-rural disparities in asset and consumption ownership and poverty globally have not shrunk since the 1970s. For the rural poor, consumption poverty and asset poverty help to cause and perpetuate each other.

**Sources:** Haddad et al. 2000; World Bank 2000a; Eastwood and Lipton 2000.
power of vested elites and poor rural services, including education, extension services, health care, or institutions and departments that do not engage with local people in decisions on resource allocations. Opportunities for rural economic development are, in many places, complicated further by historic urban biases in the allocation of public services.

Policy can improve the poverty impact of assets by increasing the extent to which such assets:
- use family labour and generate additional labour requirements in asset-building, maintenance and use (production);
- link to on-the-job training that upgrades the skills of smallholder farmers and agricultural workers;
- provide safe, healthy and non-degrading work;
- provide equal access to work and promotion for women and minorities;
- lower or reduce risk and seasonal variation, especially of employment;
- lessen exposure to sudden physical disuse, obsolescence, environmental or market non-sustainability;
- produce items that loom largest in the consumption of the poor and make them available on a reliable and affordable basis;
- produce goods or services in price-elastic demand; and
- experience rapidly growing demand for their products.

The key to sustainable rural development is legally secure access to assets by the land poor. When property rights are lacking or insecure, farmers cannot be sure they will benefit from their efforts and therefore lack the incentive to invest in sustainable practices of land management. The resulting land degradation and soil loss threaten the livelihoods of millions of people as well as future food security, with implications also for water resources and the conservation of biodiversity. This vicious circle linking poverty to the degradation of natural resources can be broken, however, by ensuring that the rural poor gain secure access to land, water, credit, information and technology.

It is not easy to correct asset inequalities. Asset redistribution can disrupt the economy: deterring saving, inducing capital flight and impeding growth, especially in increasingly open world markets. But while this might sometimes be a risk, the risk of neglecting the rural poor can be even greater: rural conflict, environmental deterioration and expanding mega-cities. The methods of redistribution must take into account the transition costs from land-ownership patterns of high concentration by the few to smallholdings that may improve the livelihoods of the many. It is in this context that the evidence on the higher productivity of smaller farms shows that redistribution can often improve aggregate production while also redressing the problems of inequitable access.

Experience suggests that pro-poor asset policy should concentrate on three main types of asset.

First, land redistribution is a powerful weapon against poverty, essential for fast progress in very unequal rural areas with limited options. Small, fairly equal farms are good for employment, efficiency and growth. Yet land – often the main rural asset – is often locked into unequal, and socially and economically inefficient, farms. Although land reform has achieved much, in its conventional, centralized and imposed form it has run into problems resulting in concentration once again in the hands of the more powerful. But new methods of land reform have shown promising results. The nature of the approach must be location-specific since important opportunities exist in different contexts, amongst others, for civil society-based reform, resettlement schemes, restitution, negotiated or market-assisted land reform, land leasing and sharecropping.

Second, policies should raise poor people’s control over water-yielding assets so they can improve
their returns from land, meet family needs for drinking water, reduce female drudgery and reduce the incidence of debilitating water-borne diseases. Such policies are urgent given the economic and climatic pressure to cut overall rural water use. Water reform involves techniques, participatory institutions, asset types and better water pricing.

Third, redistribution of chances to improve key human assets - including health, education, information and communication skills - should favour rural people, with particular attention to the poorest, women and girls, indigenous people and excluded minorities.

**Farmland Assets and the Rural Poor**

Owner-occupied farming is one source of livelihood for rural people, especially the poor. Hired agricultural labour and non-farm activity are increasingly important. Yet policy helps the rural poor mainly by raising their income from farming. In this respect, the redistribution of rights in land to poor individuals has achieved much more than is commonly realized. It is economically sound, since in poor regions smaller, labour-intensive farms normally favour efficiency and growth.

Sustainable development is about improving the livelihood opportunities for the poor. For the rural poor, secure access to land is not just about farming; it is about asset formation. Land is a convertible asset that can be used to leverage credit or sold to finance the start-up costs of other income-earning businesses. Opening these wider opportunities provides families with the security that currently eludes the landless.

Hired farmwork and non-farm activity are significant and growing sources of rural income. But their growth usually depends on rapid, widely shared growth of incomes in local farming. Also, some 70% of rural household income in Asia comes from farming and farm labour, and about 60% in Africa and Latin America. Even by 2010, at least two thirds of rural people - and 47% of all people - in developing countries will depend on agriculture. In the poorest regions, the rural dollar-poor are more dependent on agriculture in Africa than are other rural groups, though the evidence in Asia is mixed. The poor's other main source of rural income - non-farm activity - depends largely on local spending by the farming poor.

This enquiry into farmland assets produces seven conclusions.

1. Control of farmland is crucial for overcoming rural poverty, which, if it remains widespread in middle-income areas, is closely linked to extreme land inequality. In low-income areas rural labour income alone seldom suffices to avoid poverty, so most landless or near-landless rural people stay poor. Even the landless fare better where land is more equally distributed among small family farms. Small farms employ more people per hectare than large farms and generate income more likely to be spent locally on employment-intensive rural non-farm products, thereby stimulating overall economic development in the rural sector.

2. Land redistribution has been substantial and successful in many areas; the process is continuing and is usually equitable and efficient: small farms remain usually at least as productive as large farms.

3. To sustain their escape from poverty, post-reform farmers need appropriate infrastructures and services - more so if they are to compete as technology, information and farm-to-market systems adapt to urbanization and globalization.

4. Economic liberalization is gradually removing incentives and reforming macroeconomic policies that have favoured large-holder agriculture and the interests of the landed classes. In many cases, these changes make large-scale agriculture less profitable, and therefore indicate that more land may come onto local markets. This can potentially benefit the rural poor if the
valuable, financial and legal/judiciary systems are appropriate.

5. Previous land reform programmes have often been unduly confiscatory, statist or top-down. ‘New wave’ land reform, which is decentralized, market-friendly and involves civil society action or consensus is sometimes feasible and consistent with just and durable property rights.

6. Land reform processes need to be inclusive of both the intended beneficiaries and other parties with legitimate interests. Collective or state farming is seldom chosen voluntarily, seldom works well, and in some cases has worsened poverty. Both communal land tenure and private tenancy can be pro-poor; restricting them is counter-productive.

7. In supporting the processes to help the poor gain and maintain their access to land and other assets, reform agencies need to press for women to have equal entitlements and inheritance with their male counterparts. Women’s control of land helps efficiency, equity, child health and poverty reduction.

Control of the farmland asset is crucial for reducing rural poverty

Poverty incidence usually rises as the amount of land owned or operated by poor rural households declines. The land the poor do control is usually of low quality, with less water control, and less secure rights, so villages with higher land inequality, other things being equal, have more poverty.11

The poor’s gains from land distribution have several sources.

• If the poor operate land, they can combine it with labour, skills, management and purchased inputs, eating or selling the product and reaping a higher share of net income, even if output does not change.

• Furthermore, output often rises: yield and total factor productivity tend to be greater on smaller and more equal operated farms.12

• Low-income people with secure land access usually find it easier to graze animals.

• Land in smallholdings tends to be managed more labour-intensively, raising demand for labour and increasing the wages and/or employment of low-income workers, even if they do not control any land.

• All these forms of control of land and hence income, if more equal, raise local spending on rural non-farm products, and hence employment in it.13

Tenancy arrangements such as leaseholds can reduce poverty by transferring farm-management responsibilities, and thus income, from owners to tenants.14 However, inequalities in land ownership, operation, access, management and control usually go hand-in-hand. Where ownership holdings are highly unequal, great land inequality usually persists even for operated farmland, that is, after tenancies are allowed for; the management of larger operated holdings usually provides fewer jobs per hectare.

With such extreme inequality, widespread poverty can persist despite quite high average rural income. Rich landed classes pass on to succeeding generations not only land and power but lasting protection against progress and mobility by the land-poor. This ‘frozen history’ stems from inheritance, across many generations, of land enclosed by colonial or national elites. The disadvantaged groups, often ethnic minorities, become landless and are forced by coercion or hunger to work for the elites, or escape (or are pushed) into areas that the elites do not covet: ill-watered, hilly, remote, or otherwise marginal lands.15

This process, and concentration of inherited rural disadvantage, make it hard to relieve rural poverty. Where this has produced extreme land inequality with few options for the rural poor - in Kenya, South Africa, Zimbabwe, North-East Brazil, Bihar in India, parts of the Philippines - land distribution must be addressed for rural poverty to fall rapidly.
IFAD’s regional poverty assessments confirm that in most of the developing world lack of access to land is associated with low incomes and rural poverty. Landlessness and poverty risk go together also in Ethiopia, Chile, China, Côte d’Ivoire, Kenya, India, the Philippines, Tanzania and Zimbabwe. In El Salvador, a 10% rise in land ownership boosts income per person by 4%. Even tiny holdings of decent, adequately watered land reduce poverty: in rural Bangladesh, a rural household with below 0.2 ha of land consumed 7% more per person and, with over 1 ha, 43% more than a landless household. Thus even among those controlling land, poverty is correlated with the amount of land a household controls (see Table 3.1 for Bangladesh). Rural poor landowners suffer from high inequality in distribution of land in much of the developing world. Box 3.2 shows evidence of landholding inequality in selected countries.

Greater farmland equality helps to reduce poverty in the larger economy also; even as agriculture’s share of output falls in developing countries, ‘agrarian structure does not wither away’ as an explanation of national inequality and therefore poverty. Moreover, land equality is associated with faster overall growth. It is also complementary to market-oriented growth in reducing poverty: for example, when liberalization reduces farm price repression, lower-income people are much more likely to benefit if they have enough land to be net sellers of food, not net buyers.

Land distribution also alleviates the poor’s vulnerability. In an emergency, the landless have no land to sell or mortgage. Their infant mortality is much higher than among the landed. Landless labourers are much more likely to die in famines. During harvest shortfalls, farm families do more of their own work and eat more of their own product, so that they hire fewer, or no, harvest labourers.

Land reform has demonstrably reduced poverty. This was notable in Taiwan. In India the States with faster falls in poverty in 1958-92 are those that have implemented more land reform, other things being roughly equal. Beneficiaries of land resettlement in Zimbabwe saw their real incomes quadruple in 15 years. Quite modest land reform in Kerala, India, produced sharp poverty reduction (despite sluggish output) due, in part, to the complementary public investments in education and healthcare plus overseas family remittances. Most strikingly, the shift of Chinese farmland in 1977-85 from larger-scale brigade management to a highly egalitarian household responsibility system accompanied unprecedented and sustained growth in staples and other farm output; in this brief period more than one in 20 of the world’s rural population moved out of food poverty.

Thus, with appropriate policy, land redistribution tends to raise both employment and income. It can be community-driven and may take various forms tailored to local conditions. It can also build

Table 3.1: Poverty profile by landholding class, rural Bangladesh, 1988-89

<table>
<thead>
<tr>
<th>Landholding class (acres of owned land)</th>
<th>Per cent of population</th>
<th>Head count index of poverty (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landless (0-0.04)</td>
<td>13.9</td>
<td>61.4</td>
</tr>
<tr>
<td>Near landless (0.05-0.49)</td>
<td>31.5</td>
<td>53.9</td>
</tr>
<tr>
<td>Marginal (0.50-1.49)</td>
<td>19.2</td>
<td>43.4</td>
</tr>
<tr>
<td>Small (1.50-2.49)</td>
<td>11.3</td>
<td>34.2</td>
</tr>
<tr>
<td>Medium (2.5-7.49)</td>
<td>18.8</td>
<td>26.6</td>
</tr>
<tr>
<td>Large (7.50+)</td>
<td>5.3</td>
<td>10.1</td>
</tr>
<tr>
<td>Rural Bangladesh</td>
<td>100.0</td>
<td>47.5</td>
</tr>
</tbody>
</table>

on existing communal or tenancy systems as long as these systems do not present equitable opportunities by all sub-groups including men and women. Even so, some cautions are needed.

(a) Land distribution shifts many resources to poorer people only where land inequality is initially large per person. In a Punjabi case, land inequality per person was only half as much per person as per household.

(b) The national scope for redistribution is limited where large holdings are commonest in regions with inferior land. Such land is less valuable to recipients and cannot readily be assigned to the land-poor far away. However, the local scope for land redistribution is increased because farmers with more land tend to have better land and more access to major irrigation.

(c) Occasionally those with little land are as prone to poverty as those with none, for example in Burkina Faso, Mali, Western Kenya and some other areas of Africa; this is most common where land quality is very poor or where the landless have more non-farm income.

(d) Not only household access to land, but also women’s access within the household, affect poverty.

The successes of previous land reforms: the efficiency and equity case for persisting

Latin America

Latin America has the world’s most unequal farmland, and hence much more poverty than would be predicted from income per person. Yet there has been massive land reform. The pace slowed after 1985, partly because so much had been done (Box 3.3); partly because severe land inequality persisted even after reform; and partly because some land reforms had imposed collectivism, with bad economic outcomes, retrieved by egalitarian privatizations only after a costly and disruptive detour.

South Asia

In the 1950s, India reallocated most northern intermediary zamindari (tax-farmed) colonial land to working middle farmers. But the second phase of land reform – redistribution of land rights and improvement in terms of tenancy, within a largely
intermediary-free system – was largely frustrated as large landholders used the law, political manoeuvring and corruption, and mala fide (bad-faith) land transfers to supposedly powerless poor relations and clients, to avoid loss of land under ceilings legislation. In India by 1990 only 2.9 million hectares had been declared surplus, 2.4 million possessed and 1.8 million distributed to 4.1 million persons. As with the further 0.9 million hectares distributed in 1952–54 in the Bhoodan movement, the land was mostly low-grade, and the scale of the distribution was modest, though some 12-18 million, mostly poor and often members of scheduled castes and tribes, gained from it. In Pakistan, evasion of land reform was even greater.24

The South Asian experience, however, shows that even modest ‘official’ reforms can lead to considerable indirect land redistribution.

Beneficiaries of mala fide sales and transfers began to insist on their rights.

To escape ceilings, big farmers sold land to poor relations and clients.

Even in remote villages of recalcitrant States, land ceilings changed the atmosphere: despite personal risks, a few very poor people insisted on making their claims and a few exceptional officials on enforcing them.

Political activism prevented the avoidance of tenancy reforms for the poor through evictions in at least two Indian States, namely, Kerala and West Bengal. In some other States, such as Karnataka and Maharashtra, populist politics led to successive land reforms that benefited castes comprising mainly poor tenants.25

India has redistributed less than 2% of total operated farmland. Yet the rise in the proportion of

**Box 3.3: Experience of land reform in Latin America**

In Mexico intermittent but at times truly revolutionary reforms in 1918-68 redistributed 64 million ha, yet left huge inequalities and masses of near-landless farm workers, largely indigenous ‘Indians’ whose alienation has precipitated violent disturbances in Chiapas since 1994.

In Ecuador in 1964, 83.9% of all agricultural land, about 809 000 ha, was distributed to about 15% of farm families about 86 000, plus 48 000 settled on colonized land. There was no clear tendency towards large or reconcentrated units in the reform sector.

In El Salvador after 1980, about 80% of 100 000 intended households obtained direct access to lands expropriated from holdings above 100-250 ha.

In the Dominican Republic by 1961, 83 000 ha were distributed as 32 275 private parcels (13% of peasant holdings), plus 30 000 ha as collectives.

In Peru 8.6 million ha, 40-50% of agricultural and grazing land, were expropriated in 1969-80 to 375 000 direct beneficiaries, or 24% of the rural economically active population. The initial cooperatives and associative enterprises proved unstable and were later largely privatized.

In Chile the reform sector, by July 1972, comprised 35% of agricultural land (in quality-adjusted units, basic irrigated hectares). Of the two thirds of these 900 000 basic irrigated hectares remained reform (or public) in 1986 after Pinochet’s major counter-reforms – though much land did revert to the original owners, or (as forests) to large and multinational enterprises.

Other Latin American countries had major reforms, but with exceptions. Colombia illustrates aborted reform. In Argentina and Brazil most land is unreformed, but the reform process in Brazil, initiated in 1998 by President Cardoso, has distributed over 2 million ha of land with very encouraging lessons emerging from the Negotiated Land Reform programme under way in the north and north-east.

land in smallholdings suggests indirect land gains for the poor, caused by sales to escape ceilings legislation. Operated area per marginal holding probably rose in 1961-81. India is among several countries where inheritance among growing farm families, alongside a threat of ceilings implementation, outweighed pressures towards larger farm size: both owned and operated holdings became less unequal. This pattern was confined to countries with land reforms, including several, such as Pakistan and Sri Lanka, where evasion was widespread.26

Sub-Saharan Africa
For several reasons, many African countries have not attempted land redistribution. First, land is widely believed not to be scarce and hence not to require distribution. Second, some consider land redistribution as irrelevant to communal tenure systems. Third, it is often wrongly alleged that African small farms are less efficient than large ones (Box 3.4). Yet the future of conventional land reform lies, in part, in sub-Saharan Africa. Ethiopia transformed one of the world’s most feudal land systems, through a terrible collectivist detour in the

Box 3.4: The efficiency of small farms: some evidence

Allowing for land quality, ‘land productivity of smaller farms is usually at least twice that of the largest ones . . . in Colombia . . . in N E Brazil in most of the six zones; in India [and in the Muda Valley], Malaysia’. This is confirmed by farm-level data in 12 of 15 ‘countries [and] in a study of Indian villages, where a 20% decline in [gross output per hectare] was associated with a doubling of farm size.’ Though this effect was not confirmed in Peru, it was strong in Mexico and Barbados, and confirmed for Brazil, through many studies. There is strong evidence in the same direction for the Philippines, Bangladesh, the Dominican Republic, Madagascar and Kenya. In Malawi, ‘evidence . . . on domestic resource costs [per unit of tobacco output] reveals that the smallholder sector holds the productivity edge despite massive discrimination against it. For rice in West Africa, small farmers with traditional systems – not big mechanized farmers with subsidized irrigation – are competitive and efficient at world prices.

Output per hectare in north-east Brazil in 1973 was 5.6 times higher on farms of 10-50 ha than on farms above 100 ha; in the Pakistan Punjab, 2.7 times higher on farms of 5.1-10.1 ha than on farms above 20 ha in 1968-9; and among double-cropped farms in Muda, Malaysia, 1.5 times higher on farms of 0.7-1 ha than on farms of 5.7-11.3 ha in 1972-3. These comparisons underestimate the apparent output gains from shifting land from the very largest units into small ones. In Brazil in 1980, receipts per hectare of agricultural land in the smallest farm size (below 1 ha) were 100 times those in the largest (above 10 000 ha); per hectare of cropland, three times larger; per unit of capital, five times larger – and per unit of labour 20 times smaller. Some of these gaps may be due to land quality; mostly, they show how much small farmers’ higher employment-intensity leads to higher land productivity.

Usually, small farmers’ advantages are due less to higher yields of the same crop than to a higher-value crop-mix, more double cropping and intercropping, and less fallowing. All this carries environmental risks and benefits, which need careful review before land reform.

Poorer farmers also support local food security by concentrating their higher labour-per-hectare on raising yields in staples, and by putting more of their land into them. Aversion to purchase price risk stimulates staples production for net buyers (normally poorer), but aversion to sales price risk deters staples production for net sellers. This was confirmed in Mozambique.


On Brazil 1980, Thiesenhuesen and Melmed-Sanjak 1990; then in country order Barrett 1994a; Bharadwaj 1974; Boyce 1987, for Bangladesh. Finkelstein and Chalfant 1991, and Falchamps 1992, on farm size and response to price risk; and Barrett 1994a, on Mozambique.
1970s, to something approaching, in many areas, not-too-unequal family farming. Over a million hectares in Kenya were distributed, much of them to the rural poor, in the 1960s, but Kenya (like Malawi, Zimbabwe and South Africa) remains an extreme case of post-colonial land inequality. In Zimbabwe, it is estimated that some 4,500 largely white commercial farmers own over 11 million hectares of mainly high-quality agricultural land, while over 1.2 million poor black households are confined to low-quality communal areas covering a little over 16 million hectares. Zimbabwe and South Africa have embarked on reform: the former with long delay (only 70,000 ha between independence and 1998) and much disruption; the latter very tentatively; both under growing pressures to transfer reform lands to the non-poor. African land reform will need to spread, but even within Southern and Eastern Africa, IFAD identifies three distinct situations (Box 3.5). Much land legislation is under way in sub-Saharan Africa, which in many areas is emphasizing the strengthening of rights and security in an attempt to accommodate the divide between statutory and traditional tenure regimes. Redistributive reform is occurring on a smaller scale, however.

In all these cases, it is hard to envisage affordable employment prospects for the rising poor workforce without smallholder-based agricultural growth. Yet the rising workforce means that area expansion takes place into steadily more remote or low-quality land, even in most of West Africa. Especially if yield expansion continues to be disappointing, IFAD’s conclusion that ‘many smallholders do not have access to sufficient land to anticipate significant reductions in poverty through agricultural development’ means that rural poverty reduction in much of Africa requires land redistribution to smaller and more equal holdings. Efficiency requires the same: even in an apparently favourable case, Malawi, growth based on large farms, that is, without land reform, is increasingly unviable as land scarcity and labour-surplus become the norm. In many other African countries, not only poverty reduction but also efficient rural growth require redistribution of emerging modern land-rights to the poor, away from absentee yeoman politicians and their clients.27

Transitional Economies

Box 3.6 outlines experience of land reform in ex-Communist countries in the 1990s. There is a striking contrast with China in 1977-85, where egalitarian distribution of formerly state or collective land-rights induced massive poverty reduction alongside efficiency gains. Most of the former Soviet Union lost this opportunity, leaving land...
locked into inefficient modes of ownership; but some land reform has taken place.

Reform experience confirms the greater efficiency of small farms (Box 3.4). Redistributing farmland control to poor families (a) relieves poverty because their income from farming rises, and because they hire more labour per hectare from other poor families; (b) gives the poor property rights incentives to investment and management; and (c) increases yields (and often total factor productivity) by shifting land to people with lower transaction costs in screening, applying and supervising both family and hired labour.

Thus, well-conducted land redistribution can both favour efficiency and reduce rural poverty. Lieten28 argues that land reform in West Bengal triggered faster growth and poverty reduction, from 52% in 1978 to 28% in 1988; improved efficiency of irrigation required prior equalization in the agrarian system. Besley and Burgess29 show that Indian States with more land reform also later achieved faster poverty reduction. Tyler et al.30 show that countries with more equal land enjoyed faster agricultural growth. We have seen that economic growth tends to be sluggish in very unequal countries, probably mainly because excluding large proportions of people from access to land and human capital is inefficient.

Today, land reform has returned to national and international agendas, as seen in the international summits and agreements of the 1990s. Land reform is a central pillar of, amongst others, the UN Commission on Sustainable Development, the World Food Summit, the Convention to Combat Desertification and the Convention on Biological Diversity. Each of these events has been informed by the challenges and difficulties experienced in the past ranging from (a) redistributed land to the non-poor; (b) failure to identify, train or support beneficiaries committed to farming; (c) lack of mechanisms to resolve conflicts and address complex situations such as civil strife and land invasions; (d) confiscation without compensation; (e) top-down state-led reform; or (f) forced collectivization.

The 1980s saw progress in Iran, Nicaragua and El Salvador. In the 1990s reform moved on to the

---

**Box 3.6: Land reform in ex-Communist countries**

Countries like Poland, have little to reform. They avoided wholesale collectivization, preserving small-scale family farming throughout the Communist period, and still do so. But they face acutely the problems of keeping poverty falling after land reform, discussed below.

Some, like the former Czechoslovakia and East Germany, have undertaken ‘restitution’, not land reform. Former state and collective land is being restored to those, mostly large, farmers from whom it had been confiscated.

Other countries, such as the Ukraine and Russia, have allowed some collectives to privatize, but most farmland remains in state farms or top-down collectives. Yet there has been a big rise, from a tiny base, in the highly productive areas in auxiliary household plots; this has limited the impact of rural and urban poverty during the severe stresses of the 1990s. Even as privatization advances, it is doubtful whether vast, flat, combine-harvested wheatlands can return to small-scale farming. Elsewhere in Russian farming, land reform will remain a live issue, not only to reduce rural poverty and inequality, but because labour absorption is politically and socially urgent.

Viet Nam, notably, followed China’s 1978-84 lead in land reform. Both have privatized, to fairly equal family farms, much ex-collective farmland. In Romania in 1991-2, about 80% of collectivized farmland was redistributed, largely as small, family-size farms. Reform in Armenia and Albania was also egalitarian, and drastic, and showed that family farmland assets can reduce suffering even during violent disruption. However, these situations reveal that the impact on poverty depends on ensuring adequate training in farming skills, access to related resources and capital and the degree of land fragmentation.

agenda in Brazil, Colombia, Ethiopia, Honduras, South Africa and Zimbabwe. While the extent of reform varies from country to country, there was a shift – notably in Indonesia, Thailand, Tunisia, Morocco and Algeria – from redistribution of private lands to settlement schemes, market-assisted reforms and, in several transitional economies, smallholder-ization of state lands. The conclusion for Latin America has resonance for the world's poor: ‘reports of land reform's death are . . . greatly exaggerated’.32

Finding new paths to reform and fostering multi-stakeholder alliances is essential, since the experience of agriculture-sector reform has shown that civil-society movements lacking the necessary institutional and public support, and government-led reforms lacking the support of civil society, have both failed. What are needed are revitalized alliances between governments and civil-society organizations, coupled with the moral and financial persuasion of the international community.

Revitalizing support for land reform and improving the access by the rural poor to productive assets was stimulated within and between countries by the IFAD-sponsored 1995 Conference on Hunger and Poverty, which resulted in the formation of the Popular Coalition to Eradicate Hunger and Poverty. This global consortium of intergovernmental, civil-society and bilateral organizations is working towards the empowerment of the rural poor by increasing their access to productive assets, especially land, water and common property resources, and by increasing their direct participation in decision-making processes at local, national, regional and international levels.

Many land reforms have achieved much. The critics are disappointed because they expected even more (Box 3.7).

Keeping poverty falling after land reform: services, inputs, markets

Complementary service provision must be within the cost capacity of small farmers' needs, or else cooperatively or publicly supported. The lack of access to inputs and services can deny land recipients the benefits from reform. In Nicaragua and the Philippines, restricted access to credit, together with poorly defined property rights, led land reform beneficiaries to sell their land. In the 1980s, under the West Behiera Settlement Project, IFAD helped the Egyptian Government to

---

**Box 3.7: Four land reforms: high expectations, deep disappointment, medium achievement**

In Ecuador, some claim that neither the 1964 nor the 1970 reform ‘brought about a major redistribution of land’. Yet in 1964-83 9% of all agricultural land . . . had been adjudicated to . . . 15% of the country's farm families; in 1954-74 land in holdings above 1000 ha fell from 37.4% to 22.1%.

In Peru's early reforms (1964-68) 384 254 ha were distributed to 14 345 peasants, yet these accounted for 'only 4% of the land that could have been distributed with the legal instruments available and less than 2% of the peasants in need of land'.

In El Salvador, some complain that 'a much-vaunted smallholders' reform has accomplished only half its goals . . . 40% or more of the rural population [the landless] are not statutorily included in the reform'. Yet 22.7% of rural families benefited – not bad, even 'as against a goal of 60%'.

In Iran, the lands in 16.5% of villages had been purchased and distributed to 710 000 families in Stage I of the reforms, and in a further 4% of villages to 7% of rural families in the second stage, by October 1972. In all three stages (1962-75), lands in 53% of villages were redistributed and 1.9 million families, 92% of those eligible, benefited. Yet critics stress that the landlords kept the best land; that most peasants received (as owners) small plots, 'probably less than the holdings they used to cultivate' as pre-reform tenants; and that though 'land reform [gave land] to a large majority of the eligible peasants . . . most of the remainder lost their rights and joined the landless'.

rehabilitate the West Behiera State Farm's irrigation and drainage infrastructure and to then privatize it by distributing the land to smallholders. To ensure higher agricultural production and incomes, the project also provided adaptive research, extension and poverty-oriented credit services to small farmers. In the reclaimed desert areas of the West Delta, the Newlands Agricultural Services Project is providing post-settlement support services in technology generation and transfer, improved on-farm water management, access to institutional credit and marketing services in order to assist the landless settled on 2 ha plots to establish sustainable and profitable farming systems.

However, if governments wait until all input supply conditions are ideal, they will never enact land reform. Markets, not governments, supply most farm inputs and services to farmers, whatever their size. The problem arises when inputs and services are mainly geared to demand from the large and/or capital-intensive farm sector. Governments should avoid subsidizing such private services, but should create incentives to realign them to meet small-farm needs. Large farmers, with big surpluses, can overcome remoteness directly — marketing crops, or trucking in fertilizers in lorryloads — whereas smallholders need appropriate access, via competitive traders, to services, inputs and markets. Also, large farmers’ information often allows them to rely on private research; whereas small farmers need public research, as well as competitive, logistically available inputs from the market.33

Small farms face four threats to efficiency gains after they receive land assets, but these can usually be managed at costs far less than those of the huge efficiency dispersion (and poverty) associated with a very unequal land asset.

1. Wealthy farmers often gain most from public provision or subsidy for credit, services, information, irrigation and farm research. Often a tiny proportion of these inputs reaches small farmers, especially remote-area and drylands farmers and women. While small farms are thus made artificially uncompetitive with big ones, their yields — and interest in farming — will disappoint. Removing price distortions that selectively harm small farms may induce rich farmers to sell land to poor farmers, and is anyway a desirable complement to land reform. In the case of some inputs, like pesticides and water, subsidies can also be environmentally harmful.

2. Some crops, such as rubber, sugar, some beverages, tobacco, soft fruits and vegetables need timely, coordinated collection and processing. This favours large farms unless institutions to service small ones are in place. But such services are often provided cooperatively by small farmers, or privately by processors, traders, or contract farmers.

3. The potential for large farmers to shift from their role in commercial production to a new role as the provider of services to smallholders can often be easily realized. As large holders they frequently engage in processing, marketing, finance and extension. In some cases there may be mutual benefits if they take on this new role. This is harder if land reform, even with fair compensation, is often conflictual. Also, there is a risk that the rural poor will remain dependent on the former landowner in their new role as sole provider of factor markets.

Such intermediation, by pre-reform large farmers turned service managers, is one way for small farmers and land reform beneficiaries, provided they do not face new monopolies of power and control or gain benefits from the knowledge of former landowners on how to function in a world of market integration and globalization. To benefit they must adapt, combine and bargain. Public policy would be needed to moderate potentially...
exploitative practices that could easily become monopolistic unless governments stimulate expansion in the number of competitive service providers.

‘New wave’ community-based land reform

Many of the rural rich are experienced, hard-working farmers, not personally guilty of past land theft. How can they be fairly accommodated or compensated in situations where avoiding land reform will doom to failure efforts to overcome hunger? Experience suggests that new methods for negotiating land reform need to recognize both the legitimate needs of the landed class and the resource entitlements of the landless and near landless. Unless there is greater transparency in the negotiations between the poor and government officials on the methods of land transfer, the poor are likely to find themselves excluded. But community-based land reform puts the poor at the centre of the process.

The government must show sensitivity in handling the conflict of interest between landowners and the rural poor, those who now possess and those who stand to gain access to public land. The unique nature of each situation requires a specific local model tailored to each case. Such efforts include negotiated land reforms in Colombia and Brazil. Governments provide an appropriate legal framework, and some or all of: credit; some subsidy, perhaps as a land voucher; with an upper limit (in South Africa in 1995-99 some USD 2000) to target help to the poor; smallholder-geared support services; and tax or other incentives for land to move towards smallholders. Potential buyers organize themselves, identify land for purchase and draw up plans for its productive use.

Beneficiary selection may be based on self-selection or social criteria. Such schemes encourage potential buyers to seek out run-down or under-utilized farms as these are less costly to purchase. The need to develop careful farm-planning models induces beneficiaries to consider how they will develop the land and identify problems, before resettlement. Thorough planning enables greater intensity of land use, reducing the amount of land area required. ‘Farm plans also serve as a first step towards the identification and prioritization of investment needs, and to provide justification for guiding the allocation of public funds to the most productive use.’

Land reform today has new institutional requirements: group formation, land search and valuation, negotiation, bidding, farm planning, and training and service support for several planting seasons while beneficiaries learn the skills and develop the market linkages to become profitable smallholder farmers. Guidance is often required by outside organizations; it has often come in the past from an NGO or civil-society group which has supported the community during the period of acquiring the land. Conversely, the support has often come from multilateral or international financial institutions, such as IFAD, that support land management projects. An example is IFAD’s Sustainable Development Project for Agrarian Reform Settlements in the Semi-Arid North-East in Brazil, which is to provide smallholder support services based on the concept of community-based land reform.

Land reform can be supply-led and push up the net supply of land from sub-dividing government-held public lands and large-scale farms for sale in small units to the landless or near landless. Or reform can be demand-led: pushing up net demand for land by land-poor households. Demand-led methods, with farmland increasingly scarce, induces large land-price rises for only small rises in the quantity of land supplied from rich to poor. Even announcing pure willing-seller/willing-buyer concepts, in a context of purely demand-led reform, can push land prices up. Such reform is expensive, raising problems about what the taxpayer is able and willing to afford. It is likely
to transfer land exclusively to the poor when land prices are relatively low, for example when the rich are facing mortgage foreclosure, natural disaster, collapsing product markets, or fear of land seizures or invasions.

Supply-led reform is more promising. The Bhoodan, or land-gift, movement in India in the 1950s appealed to rich people's sense of moral and religious duty, and released substantial areas of land, but mostly bad land, which did not always pass to the poor quickly, or at all. In Taiwan in the 1950s, the government could induce higher land supply by offering landlords compensation in the form of shares in seized Japanese urban assets. In much of Southern Africa, colonial laws against subdivision remain; scrapping them would raise land supply from rich to poor. Where there are well-recorded individual land rights, even quite modest rates of progressive land tax can both raise land supply and steer it towards small sales, helping poorer buyers. In north-east Brazil's decentralized reforms, local authorities secured consensus by offering large landowners access to new irrigation on their retained land, in return for giving up some land cheaply to the reform; but this requires the taxpayer to pay (helped in this case by a World Bank loan).

Where the land needs of the rural poor are suppressed over long periods, as in many countries, conflicts will arise in various forms. Land invasions are regarded by some as illegal acts, whereas others argue that in the absence of any stable way to feed the families, which are the victims of intergenerational poverty, land invasions are understandably a last resort for desperate people. To fail to redress land inequality merely postpones civil conflict, like that in Central America from the 1970s to the 1990s. While land invasions (as in Zimbabwe in 2000) can involve violence, destroy farm assets and alienate big farmers, they should be seen as a symptom, not the cause, of the land problem. Even with suitable incentives, very unequal farmland control — unlike the mode of that control through tenancy, sharecropping, communal lands, or otherwise — may persist even if it is inefficient, because it enhances the power or security of the rich. That makes a strong efficiency and equity case for reducing extreme inequality in farmland control. But, given the distribution of farmland control, there is no obvious case for restructuring tenurial and managerial forms; with correct incentives they reform themselves. Most attempts to replace land redistribution by imposing changes in tenurial and managerial forms, but without consensus, including the poor, or moves towards more equal rights in land, have been unsuccessful, often counter-productive, and sometimes disastrous (see Annex 3.1).

Women, land and poverty

Reducing the barriers to women's control of rural assets, especially land, is crucial for policy against poverty.

• The barriers against women's possession and control of land cause poverty through discrimination within households that do not pool income from assets, or do not distribute that income equally. 'The risk of poverty and the physical well-being of a woman and her children could [depend on whether] she has direct access to . . . land, and not just access mediated through . . . male family members, [especially] for female-headed households with no adult male support.'

• Denying efficient managers access to assets because they are women is expensive. In Burkina Faso, household output could be increased by 10–20% by reallocating currently used agricultural inputs more evenly between men and women. The same household income, if it comes from women's asset holdings, improves child health, nutrition and education in Bangladesh, Ethiopia and South Africa; assets in the hands of women significantly raise the share of household
expenditures on education. Extra income, including asset income, accruing to women rather than men is in several countries linked to more outlay on, and gains in, child nutrition.38

- Denying women assets is unjust.

Few traditional or reformed land allocation systems have significantly raised women's control over land, though most Latin American countries have revised their land reform title laws to obtain gender equity. Many societies have shifted education, health, non-farm assets and access to assets through credit towards women; but large shifts of farmland towards women are far rarer. Giving women rights to land also gives them power, helping them to take more control in existing relations, not least by improving women's reservation wage, and hence their role and bargaining strength within marriage. Such empowerment reduces their vulnerability within the household; in Bihar, India, allocation of title to men but not women led to increased drunkenness and domestic violence. Similarly in the Mwea irrigation scheme, Kenya, failure to guarantee women's rights to land led to a reduction in their well-being. If a woman has the ‘reservation option’ to work and earn on her own land, it also gives her power in social and economic relations, and makes participation in local political institutions more likely.39

Legal and even constitutional rights notwithstanding, both inheritance and purchase of land by women face severe customary obstacles. The varying effect on farmland access and poverty is summarized in Box 3.8.

There are other ways besides giving women access to land to bring gender concerns into the foreground: via other assets, notably education; via microfinance, as in many IFAD-supported activities; and via technology, for example, of rice production in IFAD’s experience in The Gambia. Agarwal argues for concentrating on the land asset because of the ‘feminization of agriculture’: the movement out of agriculture has been faster for men.40 Hence, female-headed households in rural India increased from 20% to 35% in 1970-96. So it is increasingly inefficient and unjust if land law, custom or practice deny women effective control over farmland. In much of Asia, and increasingly other developing regions, too, little public land is

---

**Box 3.8: Obstacles to the purchase of land by women**

In South Asia, most daughters in all Indian States do not inherit land, though legally eligible. Some tribes customarily give unmarried daughters usufruct rights; in Bihar, India, some Ho women remain unmarried to keep this access. In Rajasthan, a survey of three villages found that, of the 36 women with land in their names, 34 were widows; for 27, the land was registered with their sons. Most areas of matrilineal inheritance (much of Kerala, and many tribal land systems) show less gender-biased land control than areas of patrilineal inheritance. In Bangladesh, increasing numbers of women are making claims on their share of land. However, in Pakistan, little has changed.

In parts of North Africa, competition for access to land and historical customs can work against women even in situations where women have legal rights of access or inheritance rights to land.

In East and Southern Africa, poverty is explained much less by gender bias than by policy and institutional bias against all smallholders (men and women). In Ethiopia, there is no legal discrimination by gender. In Southern Africa, women can usually inherit land; male migration has left many rural women heads of household; female land control is common.

In West and Central Africa, poverty alleviation is closely linked to intra-household distribution of, and control over, resources and incomes. In Imo and Abia States, Nigeria, the average household farms 9.8 ha, but only 2.4 ha are allocated to women and then not as a claim on land but through lease, from their husbands, for a farming season. Even widows do not have land as it is kept in trust by their husbands’ family for the children.

left. Unlike Latin America, land ceilings would not greatly increase the amount of land available (in 1996 in India, the surplus area above the ceiling was only 1.6% of arable land). Better access for women to private land is the only option.

The two routes are inheritance and purchase. Apart from customary and social obstacles to ownership by women (Box 3.8), even the wife’s ownership (or, as in much of West Africa, day-to-day management and retention of usufruct) of particular plots often leaves the husband in control, because of social impositions on women: less school access and hence higher illiteracy; restrictions on mobility (and interaction with markets and public extension services) such as purdah; taboos against female farm tasks, for instance, ploughing or (in Southern Africa) cattle management. Perhaps, especially where fertility remains very high, women’s family and household tasks militate against hands-on farm management in peak-season; yet women’s farm productivity is usually at least as high as men’s, so that their relative exclusion from land asset control is due partly to the structure of rural power, not only to physical realities or to women’s own preferences.

The strength of custom and of male power make it difficult to identify practical changes to land systems that will improve women’s land rights. In Mashonaland, communal land is allocated only to married men, and inherited only by sons; in Swaziland, land is acquired through inheritance or application to the local chief, but women very rarely get land in this way. As for distributive land reform, in four of 13 Latin American countries which desegregated gender data on reforms in the 1960s and 1970s, women formed only 4-25% of beneficiaries, as land titles were given mainly to household heads. In India, though West Bengal’s 1970s Operation Barga covered female-headed households, few received land in practice. In Midnapur, of 107,000 ha, 98% was distributed to men; even in 90% of female-headed households which received land, it was only for sons. Of 18 single women, only eight were given land. No married women were given joint title with their husbands.41

Thus, neither traditional nor reformed landholding systems have much increased women’s share of farmland. Though more women than men depend on agriculture, many fewer own land. Where they do, their ability to use it to its full potential is usually limited by inferior access to inputs, credit and extension, and by low mobility. Where women gain land-use rights through male kin, men may still control key aspects of land use; women’s rights often end with divorce (or even the death of the husband), forcing women to return to the natal home, often with no access to land. Massive reforms of women’s legal rights, such as inheritance, even embodied in constitutions, though desirable (and quite widespread), have usually proved slow and ineffective in getting land assets to rural women, especially the poor, in face of male dominance and religious and customary law and practice. In spite of Agarwal’s interesting small-scale examples of successful collective action by women to secure individual control of land,42 the issue has so far proved largely intractable by markets, reforms and laws – and even by selective male movement from villages to cities. More thought, and more carefully selected actions, are needed to address female disadvantage in land access effectively.

The rural poor and the land asset: conclusions, donor implications

More widespread access to farmland assets remains central to rural poverty reduction. The poor acquire land directly. Indirectly, smaller and more equal holdings lead to increased employment and more demand for rural non-farm products. Supposed substitute reforms (assaults on tenancy or communal tenure; enforced state or collective farming) have failed. Much redistributive reform into family farms has taken place, with generally good outcomes, but the classical land reform
process has often been slow, statist and inadequately pro-poor. Also, post-reform family farms need appropriate infrastructures, especially for farm products requiring swift and coordinated collection and processing, or connected to liberalized or global market systems. New approaches to land redistribution address these problems, often with decentralized, consensual, or citizen-driven reform processes.

The importance of land redistribution for poverty reduction is increased by:
- continuing growth of the workforce in rural areas;
- declining short-run prospects to raise employment by the growth in the yield of food staples;
- increasing awareness of the high, rising cost per job of employing the poor off-farm;
- exhaustion in many areas of the scope for increasing farmed areas sustainably, given the

---

**Box 3.9: Partnerships and actions that contribute to successful agrarian reform**

Where it is possible to merge the interests of civil society, intergovernmental organizations and governments into a common effort, the synergistic effect on rural reform can be promising. The Popular Coalition to Eradicate Hunger and Poverty suggests the following plan:

1. **Supporting alliances among sectors**
   - Build broad-based political and economic support for land-tenure reform, access to farm inputs (including credit and technology), and protection of the natural resource base.
   - Inform the general public, through educational programmes, that smallholder farms are potentially more productive and environmentally sustainable than large-scale commercial agriculture.
   - Establish coalitions of urban and rural peoples around such common concerns as the effects of the rural exodus on rural economies and urban poverty.
   - Promote innovative opportunities for public debate on citizen resource rights and the role of sustainable agriculture in improving rural livelihood systems.
   - Strengthen the collection, analysis and sharing of knowledge of the innovative approaches to land reform that can overcome the constraints experienced in earlier models of agriculture-sector reform.

2. **Assisting governments**
   - Establish appropriate legal, regulatory and judicial frameworks that can register and protect people’s resource rights.
   - Promote the ratification and application of existing international conventions relevant to indigenous people and their communities and promote the adoption by the General Assembly of a declaration on indigenous rights.¹
   - Establish independent and accountable land commissions, with adequate participation by potential beneficiaries.
   - Ensure that women’s names appear on land records, that their rights be enshrined in communal property systems, and that the inheritance rights of widows and daughters be established and protected, and promote representation by women in local decision-making bodies and on land commissions.
   - Halt the expansion of the agricultural frontier on to fragile lands.
   - Remove the subsidies and tax provisions that provide distorting privileges to large-scale farmers.
   - Establish land-tax systems, especially for under-utilized land and land held for speculative purposes.
   - Develop methods for increasing finance for land reform and post-land acquisition services, including land banks, land-for-debt schemes and land for taxes.
   - Strengthen land registries, cadastral systems and land-survey methods.
   - Develop human capital by investing in rural schools, health facilities and extension services.
   - Establish mechanisms for the speedy settlement of land disputes.
3. Strengthening rural people’s organizations

- Support consciousness-raising among landless and near-landless people regarding their rights and the opportunities for change.
- Strengthen rural worker and peasant organizations, ensuring that they include female-headed households, widows, indigenous peoples, lower castes and other marginalized groups.
- Foster the organization of communities into units of sufficient scale for viable credit and marketing systems that will be of interest to commercial service providers.
- Protect indigenous people’s knowledge and strengthen the efficiency of their resource-management systems.²
- Demarcate and protect traditional forms of land tenure with, for example, the registration of common property and pastoral areas.
- Promote improved land-management and soil-conservation practices.
- Ensure beneficiary participation in land-valuation processes and in determining repayment terms based on available labour, production skills, the productive capacity of the land, available technology and projected profitability.
- Ensure the cost-effective provision of rural services by using community-based organizations to deliver government programmes.

4. Working in partnership with international organizations

- Leverage the moral persuasion and financial conditionality of international organizations in order to place issues of land and resource rights on national agendas.
- Elaborate participatory methods to assist governments and civil society in monitoring progress towards secure access to land and other productive assets in the context of the World Food Summit and the Commission on Sustainable Development.

1. UNCED. (1992), Chapter 26.4
2. UNCED. (1992), Chapter 26.5

loss of farmland to degradation and urban expansion; and
• the especially limited and low-quality land rights of many ethnic minorities and many women.

Some of the costs of consensual land distribution can be borne by beneficiaries through long-term credit, but too much of this creates a debt trap and may force land disposals in bad times. And even partial compensation of losers in consensual land redistribution is expensive. So are complementary public (or in some cases NGO) infrastructures to facilitate private and competitive provision, often via former large farmers, of smallholder-friendly, competitive transport, input and output marketing, finance, research and extension, and credit.

Successful land reform can benefit from the lessons of the past. These point to a number of practical actions involving rural peoples’ organiza-
tions, governments and international organizations. These actions have been consolidated from lessons gathered from around the world by the Popular Coalition to Eradicate Hunger and Poverty (Box 3.9).

**Water-yielding assets and policies against rural poverty**

**Assets, water, and water crisis: selecting responses that do not harm the rural poor**

Water is vital to most production. One third of cropland is irrigated in Asia (growing about two thirds of its crops by value), but less than 3% in sub-Saharan Africa. This partly explains Africans generally lower yields, cropping intensity and food security. Water is also vital to consumption. Low-quantity and -quality drinking water in most developing countries harms health, and indirectly productivity, above all among poor rural households. These have least water security in production and consumption, partly for want of water-yielding assets (taps, wells). Hence they have less, worse or more unreliable farm water than others, and must divert calories and earning-power – almost always mainly female – to fetch water for many hours each week.

Remedies face several obstacles. First, water is becoming scarcer and less reliable in much of the world. With increasing populations and farm use, groundwater tables are falling; many major dams increasingly face management problems and are perceived as environmental threats; declining real prices of farm products, too, have undermined arguments for irrigation construction and maintenance. Second, pervasive water subsidies encourage waste, and are steered to the rich, who control most water-yielding assets. Third, there are strong and understandable pressures to divert commercial water offtake in low-income countries away from agriculture – now using over 75-90% and paying far below market rates – towards thirsty townspeople who are willing to pay. Given the importance of water resources and control for the rural poor, how can the amount, efficiency and poverty impact of water and water-yielding assets be enhanced?

Water can be stocked in tanks or rivers, but outflows deplete the stock. Someone who controls water has a once-for-all source of value, which can be consumed or sold, but not an asset, like farmland or housing, which yields repeated returns. However, the controller of a water-yielding asset can often generate sustainable returns, as with farmland.

**The water crisis and poverty**

This raises two issues.

1. Given the amount, distribution and control of water-yielding assets, can the amount and use-efficiency of water, and benefits from it – and the poor’s sustainable access to such benefits – be improved for life, health, comfort and escape from poverty?

2. What shifts, in the amount, distribution or control of water-yielding assets, might improve the amount, sustainability, or poverty impact of water benefits flowing from them?

Scarce and low-quality water in many developing countries, most critically in Near East and North Africa, already restricts development, health and poverty reduction. In the next two decades the water constraint will tighten, and affect more countries, due to population growth, urbanization and probably climate change. Further, many aspects of water use threaten sustainability. In most developing countries, heavy subsidies and other public policy towards water use – and current allocations within agriculture – are unsustainable.

Yet rural water need is a generally underemphasized, rural contribution to water inefficiency and environmental harm is overemphasized, and the case for shifting water from farms to cities is overstated. So steps to meet the crisis may further harm the rural poor by steering water away from them. Though subsidies to water use, rural or
urban, are inefficient, many proposals to axe water use for farms overestimate how much water farms 'use up' (as opposed to 'use') and the ease of transferring it cheaply to urban domestic use. Sustainable, poverty-reducing farming in many low-income areas, especially in Africa, will need more irrigation, not less. As water gets scarcer and subsidies fall, expensively irrigated areas will rightly shift from staple foods to high-value products such as horticulture; but, correspondingly, many rainfed areas will require supplementary low-cost irrigation for higher-yielding cereals.

The World Water Council gives pride of place, in slashing water waste, to (a) water pricing and (b) water users' associations. These matter, but so also do (c) drainage, (d) more incentive and technology for adequate, non-polluted re-use of water, after initial use, and (e) breeding water-economizing crop varieties. Focusing water benefits on the rural poor further involves (f) getting water-yielding assets to them, and (g) saving water by asset choices that use labour (especially in slack seasons) rather than capital - cross-bundling rather than centre-pivot irrigation. Water scarcity and movability are regional and watershed-specific; in many areas (such as the Eastern Cape in South Africa) there is spare water, which could be cost-effectively used to provide irrigation to poor smallholders. In general, priority recipients of more, cleaner water are often rural.

Water, rurality and poverty: facts and implications
The facts about water are striking.
• Scarcity: by 1992, 8% of people in sub-Saharan Africa and 53% in Near East and North Africa lived in countries with water resources below 1,000 m$^3$ per head a year, defined as severe constraint.
• Deterioration: 50 countries suffer severe constraint or are water-stressed (1,000-1,600 m$^3$ per head a year) in 2000 – as against 40 countries in 1990.
• Quantity and quality create separate health problems: adequate water availability alone would cut child diarrhoea morbidity by 25%; adequate quality alone by 16%.
• The poor suffer more: the richest income quintile in Peru, the Dominican Republic and Ghana, respectively, three, six and 12 times more likely to have a house water connection than the poorest.
• Rural quality is worse: in developing countries, 30% of rural and 18% of urban people lacked safe water; respectively, 82% and 37% lacked adequate sanitation. (Bad maintenance, especially in rural areas, makes matters worse than these official estimates.)
• The rural poor are worst hit, being more reliant on unprotected shallow wells and less able to adopt preventive measures such as boiling water.
• Agriculture is the main water user: it consumes 88-95% of annual water withdrawals (from rivers and aquifers) in China, India, other low-income countries, and sub-Saharan Africa overall; 69% in middle-income countries; and 39% in high-income countries.
• Farm water subsidies remain huge, though less than in the early 1990s (when farm water users seldom paid more than 10% of operating costs, and hardly any costs of capital or maintenance). IFAD project work confirms that such subsidies make for water waste, impede maintenance and seldom help the poorest.

These facts – together with the impact on domestic water supplies as farmers exploit ever-depleting groundwater supplies and pollute water with agrochemicals – suggest policy measures to shift water and/or water-yielding assets from farmers (who are heavily subsidized) to domestic users (who are willing to pay market prices). Water policy is doing this in many countries; in South Africa the target is to reduce agriculture's share of water off-take from its present 70% to 50% in 10-15 years. Apart from the undoubted need to slash subsidies
to water, water-yielding assets and water use (with appropriate safety nets for the poor), we suggest important caveats and more disaggregation and caution about any universal thrust to divert water from farming, given the impact of that thrust on the efficiency and equity of the rural-urban, rich-poor, and farm-non farm water splits.

- Municipal and industrial water withdrawal is often already increasing much faster than withdrawal by agriculture. For example, the presence of 31 textile firms in the Ciwalengke irrigation system, West Java, has reduced available water for irrigation, fishing and domestic use.46

- Using water need not mean using it up. Much farm water is recycled through surface or underground transfer downstream; the most efficient policy may well be incentives, institutions, or interventions to improve the quality of recycled water (by substituting better crop varieties for some agrochemicals) or its quantity (through less evaporation or better drainage). Industry and mining seem more likely to use water up than agriculture. Many processes add chemicals that render the water unsuitable for re-use. Much industry is near coasts, so that used water runs into the sea.

- Substantial local irrigation expansion, especially of minor schemes with run-off or recharge usable elsewhere, is often consistent with national emphasis on industrial or domestic needs.

- The rural poor, already hardest hit by water scarcity, are likely to be increasingly exposed if global warming brings higher evaporation rates and less reliable rainfall – and are the least able to buy their way out of damage. They need safety-nets in the event of policies to desubsidize water use, as is often indicated on efficiency grounds.

- Agriculture often pays higher implicit taxes than other activities (for example, through trade policies); cuts in farm water subsidy should not be delayed on these grounds, but should be at least matched by reductions in such ‘taxes’.

- Complementary policies should aim to save farm water by labour-using methods, and to shift control over water and water-yielding assets to the rural poor.

**Farm production, water, and water-yielding assets for the rural poor**

Irrigation has induced huge rises in farm yields, cropping intensity, and thus both smallholder and employee incomes, taking hundreds of millions out of poverty and reducing their vulnerability to poor rains. The Green Revolution of 1965-85, which induced huge falls in rural and urban poverty, has had much more impact on production and poverty in irrigated areas than elsewhere. Despite the need to refocus new farm technology on rainfed areas, reversal of past progress with irrigation, or failure to spread it where suitable, especially in Africa, would be a tragedy for the poor, and for world soils; if the poor cannot get enough work and food from well-watered lands, they and their suppliers will be driven to overfarm fragile drylands. Farmer-controlled or improved traditional microirrigation has been unduly neglected in favour of uneconomic modern schemes, notably in West Africa.47 But the accumulating problems of large dams must also be addressed; larger-scale irrigation remains essential to the environmentally sustainable food and jobs needed to fight rural poverty.

Irrigation can both improve yields and reduce rural poverty. The IFAD-supported Southwest Rural Development Project in Bangladesh installed tubewells and provided input credits to the poor; after five years, net returns to a typical small (one-acre) farm rose by over 50%. But do the poor obtain the water-yielding assets? Though at national level in India small farms are more likely to be irrigated than big ones, this is mainly because in ill-watered lands more area is needed even to survive. Irrigated parts of India have far less poverty and variability. Within most
Indian States, large farm size tends to accompany access to irrigation and hence multiple cropping. And locally the non-poor usually have more or better irrigated land than the poor. In Andhra Pradesh, India, large farms are concentrated at the head end of the Tungabhadra Left Bank Canal and smaller farms in the tail-end reaches; the poor thus obtain farm water later and less reliably. Water access is often also conditional on access to other resources (such as credit) and to political representation. In South India 'organizational connection' is an important influence on water distribution. Irrigation bureaucracies are often biased towards the more (financially) powerful in the setting of rosters for water distribution.48

For women, access to irrigation assets is especially challenging. In Kenya, since claims on water are allocated within the community through contribution to maintenance (carried out by men), women cannot obtain water-yielding assets directly. They must pay men for irrigation water; some widows have had to give up irrigated farming. In Burkina Faso, some women are lent irrigated land in the dry season in order to grow vegetables; in Ecuador, women are heavily reliant on social networks. In such cases women obtain water rights annually and ad hoc, rather than secure claims on water-yielding assets. Access is unsure and conditional, partly because it is linked to women's limited rights to land. Unfortunately projects that address this problem by providing irrigation for a crop traditionally farmed by women, without a change in power-structures, incentives or social norms, may cause the crop to become a 'man's crop' alongside control over the water-yielding asset, as with rice irrigation in an IFAD project in The Gambia.49

Even such partial participation in irrigation projects may be in women's interest. Women's consumption improved in the case of The Gambia, though their status and asset control did not. Also, they may be able to use the water for domestic needs. But public, non-government organizations (NGOs) and donor stakeholders can facilitate irrigation incentives, rules of participation and management, and organizational forms that allow for women's and female-headed households' farming and other needs. A large Bangladesh NGO, Proshika, has financed and trained mainly women's groups to control water-yielding assets and sell the water mainly to male farmers.50

Given total water supply to agriculture, the poor can gain more from water or water-yielding assets by either redistribution or improved efficiency. Can the two go hand-in-hand? How will the poor's share of water-yielding assets affect water efficiency, which includes sustainability? Land usually yields at least as much in small farms as in large, but what about water? There is little evidence, but the same principle probably applies to water. Large, rich farmers would find it paid to save water (like land) by using capital; small farmers by using or hiring labour. Overall, economic efficiency of water use in agriculture is low; it would pay society (if not always the individual farmer) if more were spent on reducing, among other things, spillage, leakage, infiltration, evaporation, clogging of water with weeds, failures of drainage, diversion of water to drown weeds (as on the IFAD-supported Kirindi Oya Irrigation and Settlement Project in Sri Lanka), and impediments to river and aquifer recharge through mistimed or mislocated irrigation or drainage. What can be done?

- Public works with slack-season labour, as in the Food-for-Work Programme in Bangladesh and the Employment Guarantee Scheme (EGS) in Maharashtra, India, can help with irrigation and drainage maintenance.
- Reducing or removing water subsidies normally increases incentives to avoid waste.
- So does reduced prestige (and sometimes corruption) for the construction and water-delivery
aspects of big dams, and more for the vital but unfashionable maintenance side.

- Economic efficiency in water use, and hence more water for the poor, could also be advanced by better integration between water and crop research, extension and delivery systems.

What sorts of irrigation-yielding assets benefit the poor most?

Small-scale, farmer-managed irrigation schemes include small tanks and non-grid shallow wells, mainly in Asia; and, mainly in Africa, valley-bottom irrigation (fadama) as in Nigeria, minor stream diversions (molapo) as in much of Southern Africa, sandriver diversion, and rainwater catchment schemes. Such schemes can be low-cost alternatives to large irrigation projects, easier to manage bottom-up, rooted in locally relevant traditional knowledge, yet often with good rates of return due to associated enhanced crop and water management. Moreover, they often provide the very poor with access to water for irrigation. In India small individual wells were the form of irrigation asset most associated with smaller farms in the late 1970s, followed by tanks, with formal dam systems and tubewells - requiring purchased or negotiated access to substantial assets - far behind. In Latin America, most irrigated rice lands are minor schemes developed by farmers diverting water from streams, rivers and wells. In the Philippines, almost half the irrigated land is watered by such small schemes, involving local associations. Box 3.10 shows the role of dambos in Southern Africa.51

Small-scale irrigation schemes can have clearer rules about distribution and maintenance. Members can be few, close and homogeneous; institutional arrangements can be local and quick; and women may be able to participate more. However, there are limitations on small-scale, member-controlled schemes. There is no outside agency to bear the risk; lack of financial or borrowing capacity can retard uptake and investment, damaging growth and equity. Small schemes tend not to cover entire watersheds or aquifers, increasing the downstream problems; these require negotiation if inequity is to be avoided.52 Above all, the design and management of irrigation is often uneconomic, or even infeasible, at levels too small to allow for the borders, slopes, flows, water resources and channels of large and integrated watersheds, or even river-basin systems.

For such reasons, and to exploit some underused African lakes and rivers efficiently and sustainably, large-scale projects, often with dams, will continue to be needed. They can indeed concentrate water on elites and head-enders; link them to the leaderships of sometimes corrupt irrigation bureaucracies, raising water uncertainty for tail-enders and the poor; weaken overview and participation in maintenance, resulting in long, frequent breakdowns which harm poorer farmers most, as they cannot afford alternative, private access to water; and risk passing ‘thresholds’ of environmental damage, leading especially to salinity and waterlogging as in parts of Pakistan. But such problems often have been overcome as water markets spread. The poor may not own a share of any major system, but they can buy water. So must better-off head-enders, who then often switch to groundwater systems, leaving the surface water to be bought and controlled in part by the poor.

Groundwater pricing has complex effects. It is surprisingly popular: farmers may neglect subsidized (but frequently inefficient) public tubewell or borehole supplies and pay high prices for reliable private supply, as in Northern India. However, as more and more tubewells are sunk and used, the water-table falls, damaging the (usually poorer) farmers and householders with shallow dug wells or tubewells. However, water markets can provide access for the poor, even if they own neither pumps nor deep wells; in Mexico, poorer ejido farmers have good access to surface
irrigation, because less-poor private farmers have sunk tubewells to water their high-value crops. In Bangladesh, small farmers benefit more from deep tubewells than large farmers; as they are more likely to grow high-yielding varieties, it pays them to irrigate a larger percentage of land.54

The poor are well placed to benefit from shallow wells as long as they are not fighting a losing battle with deeper wells for groundwater. In one area of Bangladesh, access to shallow wells benefited the poorest more than deep tubewells or land; landless households bought very low-capacity pumps, designed for drinking-water use, and moved them around farms, pumping water day and night for sale to farmers in peak seasons – a labour-intensive and uncomfortable activity unlikely to attract the rich, but a lifeline to the poorest. The capital costs per unit of water delivered are lower (but the labour costs higher) than for those of deep tubewells, making shallow tubewells more accessible and attractive for the poor. Also, handpumps need not require large outlays for fuel. For example, the treadle pump, pioneered in Bangladesh, can be used on shallow wells.

### Box 3.10: Farmer-run dambos in Zimbabwe

Why is less than 15% of sub-Saharan Africa’s irrigation potential exploited, far less than elsewhere?

- Partly due to reliance on foreign consultants/contractors with market power, extra full-control medium/large irrigation is more costly per hectare: USD 8,300 (1995 dollars) as against USD 6,800 in North Africa and USD 2,500 in South Asia. Adding indirect costs for social infrastructure, development costs in Africa approach USD 18,300 per hectare. Small-scale irrigation with full water control is no cheaper if farmers’ labour and survey costs are fully costed.
- Many past irrigation investments did badly. In the 1980s, of 15 projects with World Bank funding, five showed returns above 10%, but six had negative returns. Matters improved in the late 1980s and 1990s (with more normal climate and less anti-agricultural price bias): average return on 11 gravity projects was 9%, for seven pump projects 13%, and for five mixed projects 14%.
- Many projects are not financially or environmentally sustainable, and managerial capacity is often lacking. Government-controlled small-scale schemes did no better than large-scale schemes, despite greater promise.

Can small-scale, farmer-controlled irrigation expansion help? In Zimbabwe, irrigated gardens in dambo wetlands illustrate low-cost indigenous water management. Control by local communities, allocating land for garden cultivation, is an advantage over many formal irrigation systems, allowing flexible water management.

Dambos yield about twice the return to land and water of standard irrigation; flexible water management lets farmers diversify into high-value horticultural crops.

Despite their potential, new dambos have been banned in Zimbabwe since 1975 to prevent erosion and protect downstream flows. Yet, if indigenous management practices are used without deep drains or mechanized pumping, dambos need not be erosive, and the water not used by the crops still flows downstream. Since dambos are far more productive than dryland farming and are the main source of production for smallholders in communal areas (and cause less soil and water erosion), they can relieve pressure on upland resources. At present there are about 15-20,000 ha of dambos in Zimbabwe, compared with 150,000 ha of formal irrigation, of which a much smaller proportion is controlled by the poor, and with potential to develop another 60,000 ha. Dambos are also extensive in many other parts of Southern and Western Africa, particularly Malawi and South Africa. Dambos seem especially promising for the rural poor; most dambos are located where most of them live; they support labour-intensive horticultural crops, yet give a decent return per man-day. But expansion requires legal acceptance, improved marketing, and institutions to prevent over-exploitation of water.

requires low capital investment and uses human energy; in 1989 most users were very poor and there was high social acceptance. Although such schemes cannot serve many farmers or large areas – the wells are shallow or produce only small amounts of water at a time – there is much potential for individual smallholders.55

Productive water and water-yielding assets:
raising the poor’s access and gains
With appropriate policies including safety-nets, desubsidization and water market access can greatly help the rural poor to control water. However, control over a water-yielding asset provides more water security. How can water-yielding assets for the rural poor be increased, or made more productive?

• Well and pump permits can regulate pumping of groundwater resources, with fines or shutdown for over-pumping. This could benefit poorer farmers who use shallow wells. Despite serious risks of rent-seeking and corruption by regulators (harming the poor), the downstream and distributional effects of unrestricted private pumping are so significant that regulation is becoming almost universal.

• Irrigation technologies need to respond to the needs of the user. For poor farmers this often means building on traditional methods such as dambos (Box 3.10), or introducing low-cost technology that is easy to operate and maintain. Yet large systems, with top-down water management, provide many poor people with water, work and food; though serious sustainability and management problems have usually developed, they can be corrected with more participatory management and appropriate new technologies such as rotational irrigation and cross-bundling.

• The poor can be helped to invest in their own wells, pumps and so on, with credit, technical assistance, input distribution, extension and the provision of hydrological data. Ownership of irrigation equipment can be feasible even for the landless.

• Water asset acquisition illustrates how the poor can be helped by appropriate management of – and, even more, civil-society influence by the poor upon – the current shift in the role of stakeholders. In that shift, governments reduce their role in production and subsidy, and create incentives which encourage competitive private provision for the poor. However, experience with water, with its many externalities and long-term effects, shows that for a pro-poor government creating an enabling environment for the private sector through law enforcement, mass education and information is necessary but not enough to benefit the poor. Government needs to target benefits to them, in its role as facilitator, provider of safety-nets and regulator of external and hidden impacts, and farmers and labourers need to control more water-yielding assets. Since the poor use their labour to save water, this should increase efficiency in water provision and use.

Water user associations can help keep water-yielding assets, especially degraded large-scale public irrigation systems, well-managed, responsive to users and sustainable. But even on small-scale irrigation projects in West and Central Africa, the poor have barely participated in them.56 Labour contributions to a system should be recognized as a substitute for financial contributions, so the poor can legitimately and easily gain access to water for irrigation. Water user associations can also help ensure that those at the head-end and tail-end benefit equally, as efficient and equitable irrigation performance depends on cooperation of all affected by an irrigation system. With adequate planning where farmers know the schedule for the canal and are active in decision-making about the distribution method,57 more equitable access to irrigation should result.
Access for the rural poor to water and water-yielding assets for consumption

In consumption, too, water waste and wrong price incentives go alongside worsening global shortage and severe local scarcities, yet are addressed through policy priorities reflecting the power and interests of the urban rich. For example, urban health damage is rightly addressed by public measures to improve water supply and sanitation; yet much less, per resident, is spent to address graver rural problems.

In many developing areas, scarcity, remoteness and pollution of water for consumption impose heavy collection costs and damage health, particularly of children. The burden is heaviest for the rural poor. Better domestic water would also raise their returns from other assets such as land. Educational asset-building also suffers when girls must carry water, or children miss school because they are ill with water-borne diseases.

Yet, to have the best impact on health, clean rural water requires complementary sanitation and hygiene education. In Imo State, Nigeria, water at the borehole was clean, but became contaminated in transportation, storage and contact with users' hands. Even a bundle of health-related water policies - clean supply, sanitation, education - may be much less cost-effective in reducing mortality among the rural poor than similar outlays divided between such policies and measures to improve child nutrition directly, as in Narangwal (in the Indian Punjab) in the 1970s. Nevertheless, a comprehensive review of over 100 studies of the effects of feasible water and sanitation improvements in developing countries in 1990 suggested that they would reduce deaths from diarrhoea among under-fives by two million a year, one fifth of such deaths from all causes. The incidence of disease, and the potential benefit from water improvement, are greatest for the rural poor; so is the difficulty of maintaining and sustaining equipment to improve water quality, and of recruiting support for the costs from influential people exposed to infection.

Health damage from dirty water apart, poor rural women and children now incur much time, effort, calorie loss and exposure to insect vectors while collecting water, especially in remote drylands. A village handpump or standpipe reduces the burden of water transport over long distances, reduces water losses, needs and contamination, and brings further gains to health. In a Mozambican village with a standpipe in the square, women spent only 25 minutes a day collecting water, as against 131 in a village where access to water meant a two-hour round trip; in the standpipe village the average woman enjoyed 433 minutes of rest daily (compared with 385) and more water was used.

How to increase access to consumption water, and to related assets, for the rural poor

The International Water Decade launched by the UN General Assembly in 1980 sought ‘water and sanitation for all’. Thousands of water supply systems were installed, but fewer were maintained. In rural areas, dispersion of settlements impedes water provision and maintenance. Also, population growth masks the gains. By 1994, 800-850 million rural dwellers still lacked ‘formal’ water supplies. Many villages lack even communal handpumps and use river water, springs, tanks or hand-dug wells with a rope and bucket, raising transaction costs and harming health. Some rural people get water from vendors, but often at a high price. In El Nahud, Sudan, some poor families spend up to half their cash income on drinking water.

Slow progress is partly due to lack of funds, but more to the types of technology and lack of effective incentives, information and institutions for poor users to manage and maintain these systems. In the 1970s, at least 70% of handpump projects were not sustainable. Technologies, and systems and incentives to maintain them, need to be
appropriate to rural realities. This often means ‘non-grid’ water-yielding assets, each controlled by one poor household (or a few closely linked).

Wider-scale community approaches require shared, and policeable, community interests and contributions. Village Level Operation and Maintenance (VLOM) was introduced in the 1970s to give the community control over their water supply, minimizing pump downtime through simple community maintenance and quick response to breakdown. This requires an easily maintainable handpump, locally available spare parts, a paid, trained villager responsible for maintenance and repair, and therefore regular payments into a village fund. Although sometimes effective, VLOM has shown serious weaknesses. Donors overlooked many local technologies. Hardware was emphasized (and often complicated by variations among donors) at the expense of local training, maintenance and management. Social acceptance or appropriateness was often not realized, and a reliance on imported parts limited opportunities for communities to take control of their water supply. Users often thought that the institution that installed the handpump had ownership, and were thus reluctant to take responsibility for operation and maintenance. One drinking water rehabilitation project experienced badly organized villager participation in management, compounded by reliance on outsiders for spare parts and fuel, harming sustainability.

Funds and organization to provide training and incentives to individual or group maintainers are crucial to success in rural community water supply. In India, as part of the United Nations Children’s Fund (UNICEF) water supply projects, women, the main managers and users of the water, were trained in pump maintenance and repair. In one State, a cooperative of women mechanics was later contracted by the State government for rural pump maintenance and repair. In another, landless men demanded training, too, since there is much scope for income generation if these skills can be learned.

To retain the desirable aspects of VLOM while avoiding the top-down choice of assets and technology that damaged much of it, the World Bank promoted the Demand Responsive Approach to Water (DRAW). Communities start this process, making informed choices about their project and how to fund it. This move away from supply-led water systems could increase coverage, reduce waste, enhance community participation and improve maintenance and sustainability through a sense of ownership. Under DRAW, water is seen as an economic good, and in all countries studied (Benin, Bolivia, Honduras, Indonesia, Pakistan, Uganda) the rural poor proved willing and able to pay the recurrent (and some capital) cost of supplying water, if it is clean and reliable.

However, even modest water charges could exclude the very poorest. Moreover, if they do buy the water, they have even less to spend on basic food. This makes a case for contribution in the form of labour. In the Swajal project in India, poor communities in the hills contribute only labour to the capital cost of the water-supply system. A water institution should also build on communities’ altruism; many will, at the extreme, share their well with those who cannot contribute; in others, subsidies are arranged internally. In a village in Swajal, the community undertook a wealth-ranking exercise and asked the poorest to contribute less. In Tanzania, widows were exempt from handpump maintenance funding. Systems such as DRAW require not only community/group financial or labour contribution but often also a shift by the state from provider to facilitator and water-quality regulator (though the World Water Commission rightly stresses the state’s welfare role as at very least the water provider of last resort) and an increased role for NGOs (to facilitate demand) and the private sector (providing pumps and spare parts). It is crucial that incentives and...
institutions are appropriate to induce the stakeholders to undertake their new roles. The key points for sustainable rural water supply systems to reach the poor are:

- response to demand, expressed through willingness to pay or to contribute labour;
- user financing of at least the recurrent costs;
- technology appropriate to the service level demanded by a community, and practicable to operate, maintain and repair, with affordable and locally available energy and spares;
- water groups, from a few households to community committees, to administer financing and to operate, maintain and repair their own part of the water supply system; such groups to include the working poor, especially women, in ways that do not overburden them;
- complementary hygiene education, sanitation and nutrition support for growth-faltering under-fives and pregnant women, to achieve the most cost-effective impact on health;
- subsidies targeted effectively, so government budgets are released for increased coverage, while taking account of the willingness of some communities to cross-subsidize; and
- appropriate institutions and incentives for all stakeholders, including the state 'water safety-net', to act properly.

Livestock assets and the rural poor

Benefits to the poor of controlling livestock assets

In many poor regions the rural poor depend heavily on income from livestock production, but can seldom afford to eat animal products; they must usually trade them for staples with lower costs per calorie. Yet paradoxically the poor (a) depend most on livestock income, not where trade is easy and cheap, but in sparsely populated drylands where trade involves high transaction costs, and (b) control relatively few large stock, that is, the livestock with more regularly and readily traded products (such as cattle, water buffalo, camels). Explaining this paradox suggests the livestock products, assets and policies that can improve the livelihoods of the poor.

In arid areas, extensive or transhumant large stock-grazing is the only way to support many people from land use. In semi-arid areas, large stock supplement coarse staples (maize, millet, sorghum, roots and tubers) as a source of income. In Asian and some African semi-arid regions, livestock are integrated into smallholder and labourer livelihoods through mixed farming systems, providing draught power and manure for cropping, and living off crop residues as well as grazing. Large stock enhance land and labour productivity through draught power in large areas with physical or economic conditions intermediate between those suitable for tractor and for hoe cultivation. The poor can benefit from livestock asset control, especially in areas of newly settled or expansible land frontiers, but only with appropriate institutions for acquisition, management and trade. FAO's Smallholder Cattle Development Project in Sumatra provided transmigrants with draught animals, to be paid for in kind by returning two offspring within five years. This increased average cultivated area from 1.4 ha to 2.3 ha, doubling incomes.

Livestock produce several benefits for the poor:

- They provide food direct; the poor consume a little of this but sell more for cash, which is then used to buy staples.
- Livestock manure can be used as fertilizer or fuel.
- Livestock 'embody' saving in a pro-poor way, with yield extracted largely by labour (for example, milking).
- In bad times animals are sold, and many are kept with this in mind. However, when hardship, such as drought, strikes almost everyone in an area, many seek to sell stock and buy grain - and the value of stock decreases as the grain becomes dearer. This cuts the food-security value of the poor's 'livestock savings', especially if, as in much
of Africa, livestock are very unequally distributed, with few potential buyers who have market power. • Sale of livestock in hard times also acts as a buffer against loss of other assets. In Northern Nigeria, those without livestock at the beginning of a survey had 12% less land four years later; those with livestock retained the same acreage.73

Given asset value, a mix of livestock and cropland often brings more income than either type alone because of close links between crop and livestock production, the flexibility each provides for the other (like choice of ploughing and manuring times), and difficulties with animal-hire markets. Zimbabwean smallholders who combine livestock and crop production have incomes twice as high as those with only crops.74 However, in marginal arid-to-semi-arid lands, livestock alone can be the only sustainable land use. In less extreme cases, drought risk to crops can exceed even the risk to cattle, especially for poor farmers with less prospect of water access in crisis.

Livestock bring new risks: illness, death, theft. Nonetheless, ‘since crop income is risky, [a few] assets in the form of cattle [and] small livestock [are carried, to increase] risk-bearing capacity . . . even at the cost of lower levels of income’.75 It may reduce risk to spread one’s portfolio even into risky assets, if some of the risks are weakly correlated (drought threatens both crops and livestock, but pests, theft and flood usually affect one much more than the other). Apart from often reducing total risk, livestock help in managing risk if they can be sold in bad times.

There are far fewer transaction costs of large stock if the controller also controls land; many of the poor do not. However, this can be overcome, enabling even landless households to keep livestock assets. Quasi-cooperative service arrangements, such as those pioneered in Gujerat, India, and now widespread under the National Dairy Development Board, collect milk daily from many owners (sometimes landless) of just one cow or water buffalo, and sometimes provide small feed packages. Many communities have common grazing. Others practise transhumance, helping to move cattle away from drought areas, as with the Fulani in Nigeria (though the poorest often lack access to trek routes, or food for the journey). Even when land scarcity erodes such options, stall-feeding (zero grazing) increasingly allows the poor to substitute labour for land. Small stock, especially poultry, often have minimal land requirements.

Though the rural poor benefit from livestock asset control, it is often skewed against them. In Botswana, though most farm income is from cattle, the poorest 40% of farm households owned none. However, as in much of Africa, they could often exchange labour for some control of cattle owned by others, being rewarded for cattle-care with the rights to animal products, fallen animals and some calves (the mafisa system). In Bayan Tsagaan village, Mongolia, the poorest quartile of households had only 5% of privately owned livestock. However, in Madhya Pradesh, India, livestock ownership was less unequal than ownership of land,76 as in parts of rural North India, where livestock income is over a quarter of the total, and more for the poor. In a village in Pakistan small farms obtain over half of their farm income from livestock, as against 30% on larger farms.77

So the extent to which livestock are the focus for livelihoods among the rural poor varies greatly. How, if at all, asset policy should concentrate on getting livestock to the poor depends on the specifics. However, in Asia, Latin America, Near East and North Africa and parts of sub-Saharan Africa the ‘livestock revolution’78 is sharply raising the share of farm resources going to livestock, and the share of grain consumed by animals rather than humans. From such changes in asset structure and use, the rural poor - who still derive most calories, and employment incomes, from staples - are not, in most cases, well placed to benefit. Can they be helped to do so?
The poor, types of livestock assets and livestock asset policies

Poor farmers are less likely than others to own several species of animals, but more likely to own poultry, sheep and goats rather than large stock. Small animals are also much more often controlled by children and women (who in Senegal own 60% of sheep and goats). Effective pro-poor policies for animal assets need to recognize why poor households tend to own smaller animals – whether to support them in this, or to relieve constraints to their profitable and safe control of large stock. A number of reasons can be suggested:

- Small animals require less cash, capital and loans, relative to labour, to buy and maintain.
- Given herd value, more and smaller animals simplify distress sales and make death of an animal less risky.
- Small animals grow and breed faster, reducing pay-back period (the poor pay higher interest and have greater time-preference), diffusing risks from disease, and permitting mixed-age herds (even small ones have some animals mature and food-yielding at most times).
- Goats and sheep can thrive on harsher terrain and vegetation than large stock (benefiting poor farmers on marginal land) and contrary to conventional wisdom tend to do less harm in ecologically fragile zones than larger animals.79

This suggests two ways to reduce poverty. Larger proportions of livestock extension, public-goods provision and research should aim at improving the labour-intensive management of small herds of small stock, for example, by better management of infectious diseases. Second, artificial or non-economic barriers to control of large stock assets by the poor should be removed through better access to small dispersed livestock auctions, as is attempted in Botswana, or through cooperative arrangements for rapid collection and processing of small amounts of milk.

Provision or subsidization of ranches, a popular livestock policy in Eastern and Southern Africa until well into the 1990s,80 has proved counter-productive for the poor. Enclosing common land for ranching deprives their small stock (and their few cattle) of grazing; ranchers replace cattle guards with fences, cutting demand for the labour of the poor.

Control over livestock assets can help the poor even without ownership. However, the crucial savings/sale function of livestock is available only to owners; and large herd-owners are much more likely than small ones to displace employment with equipment. Nevertheless, livestock costs and benefits can be shared in ways helpful to the poor, as with mafisa in Botswana, or as in Nepal, where households owning more than five buffaloes often lend one to poorer households and share the profits.81

Just as larger farmers of tobacco or cotton can become contractors for inputs and services, with the poor taking over the farming in small units and gains for all, so larger herd-owners may be well placed to switch to management, finance and sales of processing products (hides and skins, tanning, dairy processing). This creates new employment, often for women, while leaving the control of cattle increasingly to smaller herders. It is important and feasible for policy to encourage such shifts.

Other physical assets and rural poverty reduction

The rural non-farm sector

Poor households typically have diverse sources of livelihood, both to reduce risk and to provide income in slack farming seasons and bad times. While farming and hired farm labour usually predominate, the rural non-farm sector (RNFS) is becoming increasingly important as a source of income and employment for the poor. The RNFS now accounts for some 44% of rural employment...
in Asia, and is growing over twice as fast as farm employment in India. The rural share of rural employment has increased rapidly in Latin America; in Brazil and Ecuador it reached at least 30% in the early 1990s. The proportion of rural incomes earned from rural has also increased in most cases, averaging 45% in 25 African country case-studies; in India the range is 25-35%. The proportion is higher for poor than non-poor households in many places (India, Pakistan, Mexico) but in Africa the rural share in non-poor incomes may be twice that of the poor.82

The growth of rural is more labour-intensive, lower-skilled, stable, and thus pro-poor than urban non-farm growth. But the sorts of rural growth that reduce poverty usually work best where farm income, and thus local consumer demand, grows too. Rural often comprises ‘distress diversification’ into otherwise declining crafts, because farming is doing badly. This can sometimes revive rural incomes; Botswana craft baskets are a striking example. However, almost all studies indicate that rural growth based on growth linkages to successful farmers and their employees, who demand booming services (construction, trade, transport), has a better chance to cut poverty. Most traditional rural participation, reflecting family skills, land shortage, or the need to diversify against seasonal unemployment or annual drought risk, is linked to poverty, so should not be neglected; but modern, linkage-based rural is a more promising way out of poverty.83

Usually, poverty-reducing growth of the modern rural is more likely to arise from widely shared agricultural growth (leading to rising demand for local rural activity), and from interventions to provide the poor with appropriate skills, education and competitive nearby credit, rather than with physical non-farm assets. Unlike agriculture, where one can identify public goods for farming, and public strategies for private asset support likely to reach the poor, rural is diverse in assets required; the history of asset subsidization in the rural suggests that centralized intervention seldom picks winning techniques, sub-sectors, or potential entrepreneurs, or targets gains on the poor. Rural ‘industrial estates’ have a long history of failure and mistargeting, often subsidizing medium entrepreneurs against tiny, poor competitors. An IFAD report on microenterprise in West and Central Africa shows that most rural asset support leaked to the non-poor, partly because of the lower fixed costs of administering larger transactions: the mean loan size for the Alliance de Crédit et d’Epargne pour la Production in Senegal was USD 1,500.85 India’s Integrated Rural Development Programme (IRDP), intended to direct grants and subsidized loans to the poor for non-farm asset formation, had mixed results but is widely agreed to have been ill-targeted and cost-ineffective.

In remote areas, high transport costs can provide natural protection for rural, making it potentially profitable. Also, rural income can be a source of savings for farm investment. Yet rural itself seems often to need outside credit as a catalyst, more than does farm investment: Indian districts with good branch bank networks show faster growth in rural, not in agriculture. Often rural profit levels are dependent on local farm production: forward and backward linkages to agro-industry, and especially ‘consumption linkages’ to higher incomes, locally spent, for smallholders and farmworkers.

Roads and communications, as well as bank infrastructure, often affect inputs and marketing more for rural than for farms.86

Where land is scarce yet farm yields cannot keep up with the growth of rural working population, rural growth is needed to reduce excess pressure on natural resources, as well as to provide workplaces and keep poverty falling. Yet the modern, dynamic, rural sub-sectors, such as construction, transport and shops, seldom prosper where agriculture is stagnant. Traditional crafts and services are most likely to engage large proportions of the
rural poor, keeping them alive if not lifting them out of poverty. Policy should avoid undermining these sectors, for example, by supporting otherwise unviable medium-scale rural brickworks in ‘industrial estates’. Conversely, artificial support for RNFS sectors associated with distress diversification, such as household-based craft products, is doomed, especially as competition from modern urban sectors and imports is liberalized. The best prospect is offered by appropriate regulatory and credit frameworks, public support for training, and other measures to revitalize RNFS by upgrading assets in very small units for the rural poor.

Such policies should be directed at a number of areas.

• Public goods and facilitation of agriculture-RNFS linkages. In North Arcot, India, a 1% increase in agricultural output is associated with a 0.9% increase in non-farm employment.\(^{87}\) RNFS should therefore not become the focus of rural policy at the expense of agriculture. Policy should increase positive intersectoral linkages.

• Support for RNFS activities induce the most and fastest poverty reduction. Where growth is rapid in RNFS sub-sectors, entry barriers faced by the poor should be publicly identified and, where cost-effective, addressed. They include lack of finance; information about technology and markets; skills; and infrastructure.

• Appropriate government regulation (of construction or transport, for example) should avoid arbitrary imitation of Western or urban density or other aesthetic norms, and emphasize essentials for health, safety and competition. Implementation should be open, bound by simple published rules, concentrated on important cases, and enforced through civil-society pressures and light but applied laws.

• Appropriate credit support. Although many microfinance institutions, like India’s IRDP or Bangladesh’s Grameen Bank, target the RNFS, access for the poorest is very limited.

• Human capital provision to give the poor the capacity to enter RNFS. This need not consist of formal primary education. There is plenty of scope for basic literacy, numeracy and bookkeeping classes which could improve the position of the poor within the rural off-farm labour market, if not enable them to set up their own profitable enterprises. Indeed, the ageing workforces of Asia and Africa mean that most of the working poor in 2020 have already completed formal education; in RNFS and elsewhere, it is too late to meet their skill needs that way.

**Housing**

The house often comprises the poor’s main physical asset by value. For consumption purposes rural houses of mud or sticks are often worse than urban slums; the average rural standard of drainage, power supply and sanitation is far worse. As for production, whereas most urban people live and work in different places, rural people often obtain much of their livelihood in or near the home. The rural poor can benefit from ‘fungibility’ by adapting the use of space within the house between production and consumption, spare rooms and workrooms, and supportive labour between child care and outwork such as lacemaking.\(^{88}\)

Despite the importance of housing for the rural poor, housing and support policy have been overwhelmingly urban. The main thrust of urban anti-poverty policy, in sharp contrast to rural concerns, remains upgrading slums and improving shelter and supportive infrastructure. This has encouraged migration to cities, which has raised housing costs, reduced quality for the poor, and enlarged squatter settlements, with serious health hazards and congestion problems. This urban focus neglects rural areas where even worse housing (and other) conditions encourage urbanization.

A poverty-oriented policy for rural housing assets would first confront the problems of sea-
sonal intra-rural migrants, mostly for farmwork or construction (such as the Torrontes in parts of Latin America). Lack of dwellings have worse effects in rural areas than in cities on untreated illness, unprovided education, and unpoliced crime and violence against women. Second, public research is needed on (a) improving access for the poor to traditional housing materials (for example, thatching grasses), which have great advantages but are becoming scarcer or more distant because of deforestation and new land uses; (b) economizing on such materials by enhancing their durability; and (c) controlling pests, and instability during rainy seasons. In India more than half of the rural housing substantially uses mud bound with cow-dung.99 Third, large local employment programmes in Bangladesh, Bolivia and India might test improved designs, based on local materials, to help with off-season house construction, maintenance and repair,90 normally using small construction firms, not undercutting them with subsidies.

Apart from stimulating supply, policy can support rural housing by redistribution and service support. Land reform in Kerala concentrated more on house-plots and surrounding home gardens than on farms.91 Normally, the redistribution of house space must be consensual: the supply of inexpensive housing to the poor is reduced by rent controls, but increased by making rental markets better informed and less restricted. Also, there may be scope for rural site-and-service programmes in areas of severe housing deficiency. Where house waste-water can be safely applied, a garden used for home consumption or marketed vegetables often greatly enhances the housing of the rural poor, especially women.

Transport, communications and infrastructure assets
Rural roads in India and elsewhere deliver high rates of return. Bad roads in Africa make marketing margins – the gaps between farm and market prices – far higher than in Asia; so rural people, especially remote and poor ones, can therefore benefit less from improved incentives and liberalization. In areas such as Wollaito, Ethiopia, off-take of fertilizers, and of higher-yielding maize and other crops, is limited by the huge costs of marketing over long distances along terrible roads. However, paving Africa is not a simple solution to rural poverty. In many drylands, returns to roads are depressed by sparse and dispersed population, low value added per square mile and per person, and small exchangeable economic surplus. In such regions the cost of building roads to many dispersed villages is prohibitive. Imaginative solutions are needed to reduce costs of transport grids, or to find affordable alternatives. One approach is through the size and location of stores. Another is to divert some resources from long and usually expensive rural-to-urban highways to short inter-rural roads, permitting specialization and exchange. A third option is labour-intensive maintenance (and some local contribution) to all-weather roads through rural areas. A fourth is migrating nearer water sources and outwork. A fifth is consolidating farm fragments (not farms) to save travel.

The gains of the rural poor from improved transport go far beyond market access. Apart from easier trips for schools, clinics, extension and so on, on-farm transport can relieve drudgery and save time. For the rural poor, most travel occurs within the village, mostly for subsistence tasks; transport improvements here could especially benefit women and children. In a Kenyan study, only 22% of journeys were for exchange; half were for farm work and housekeeping. In a Tanzanian village, 75% of transport time and 80% of tonne-km. involved women. In Ghana and Tanzania most movement around the village is on foot. Although the terrain and lack of storage capacity sometimes dictate head-loading for water collec-
tion, new forms of transport could help in collecting firewood.92

Though roads normally raise output, choice and income for most people, the poor may gain little, because they seldom control the means of transport. Non-motorized vehicles, like bicycles or donkeys, can often meet the poor’s needs relatively cheaply and reliably. In Uganda, of 715 journeys a day recorded at 55 points on rural roads, 75% were on foot, 22% by bicycle and only 2% motorized. In rural India, bicycle ownership was far higher among the poorer households. Credit-insurance schemes might help more poor people to acquire bicycles. Where households are not too dispersed an animal cart or bicycle trailer might be feasible; a trailer can quintuple a bicycle’s load capacity.93

At times modern communications can substitute for some transport. However, there is no content to most speculation about the Internet as a remedy for the transport and communication problems of the rural poor.94

**Human Assets**

Why shift human asset-building towards the rural poor?

Human assets, which capital ‘embodied’ in people, are in most ways like other assets. They are built up by sacrificing current consumption or leisure. They depreciate unless maintained. They help people controlling them, both by providing a cushion against bad times and by increasing income, welfare or capabilities above what can be achieved with heavy labour power. In this respect, human assets are becoming much more important, relative to physical assets, due to global acceleration of information, technical knowledge and mobility. Yet the share of human assets enjoyed by rural people, the poor, and above all poor rural girls and women, is arbitrarily low (and has not been rising globally), though their private and social return on such assets is high. Especially where the rural poor are a large proportion of the population, that is inefficient, as well as unjust – ever more so as the relative role of human assets increases. Policy must focus on human asset acquisition for rural poor people, especially women and girls; otherwise their disadvantage will become increasingly stubborn.

Human assets are conventionally classified as nutritional status, health and education, but their nature is changing radically. Education increasingly involves lifetime skill acquisition for management and for acquiring and processing information, in a context of more rapid and frequent changes of work and residence. Health and nutrition needs are being transformed alongside demographics (especially age-structure), work, and medical threats, knowledge and technology.

Human assets have intrinsic value in raising capabilities and/or happiness, and instrumental value in raising income – and thus access to further capabilities and happiness. These values can be realized directly, by applying improved skill or health to initial leisure, labour and natural and physical assets; and indirectly, by using improved health, education and nutrition to control more assets that raise consumption, leisure or earned income: to obtain information and to implement choices, especially through mobility.

Most extra instrumental benefit from human assets depends on combining them with extra natural or physical assets (land, a workshop) or with new or better work. Skills and good health raise income by increasing productivity of labour and/or natural or physical capital, and hence encouraging people (or their employers) to use more of them. Extra human assets and other inputs are complements. Conversely, the poverty impact of skills and health is less if there are few profitable outlets for labour or for physical or natural capital. In rural Pakistan the extra income obtainable from education is substantial in the green-revolutionary province of Punjab, but small and unattractive in the more sluggish rural Sind.95
In Eastern and Southern Africa, ‘as long as small-holder agriculture remains the principal economic activity of the rural poor’ – although better health and education retain intrinsic value – their instrumental ‘impact . . . will be limited until the major institutional and resource constraints facing small-holder producers are reduced’. Income gains, often attributed to better rural nutrition, health and education, are seldom achievable unless it pays those who acquire them to obtain more, or more productive, complementary work or natural or physical assets.

Educational provision and outcomes have been improving globally, though unevenly; so had nutrition outside Africa, and also health provision and outcomes, until the terrible reversals of the 1990s due to AIDS, tuberculosis and malaria. But the rural and the poor remain far behind and the gaps have not narrowed: the rural poor still have worse health, education and nutrition outcomes and worse provision than others. So for the rural poor, a little extra – a dozen more clinics, a hundred calories a day, an extra year of adequate schooling – enhances welfare, capabilities and income more than for urban or rich people. Further, that little extra normally costs less: since the rural poor, especially the remote and minorities, have least provision, educational and health options with high returns are most likely to have been overlooked; an extra year of education, for example, is likely to mean costly tertiary education for the richest urban children, but primary education for the rural poorest.

Human capital assets of the rural poor

Access to educational assets differs sharply between rich and poor, and between urban and rural people; since the rich can seek out urban schools, rich-poor differences are greatest in rural areas.

Rich and poor. In Bangladesh, Pakistan, Malawi, Mozambique and Egypt the richest income quintile enjoyed, on average, twice as many years of education as the poorest, in addition to huge quality advantages. Moreover, the spread of school access (by region, gender, and so on) is much bigger among the poor. It follows that the median poor child is particularly disadvantaged educationally compared with the median rich child, above all in the poorest developing countries. In the 1990s in India, the median 15-19-year-old from the best-off quintile of households had completed school grade 10; but the equivalent person from the poorest two quintiles had zero schooling. In Indonesia the respective grades were 9 and 6. Education greatly reduces risk of subsequent chronic poverty in rural China and rural and urban Egypt; chronic and transitory poverty in rural Pakistan; and total poverty in rural and urban South Africa.

Rural and urban. There is no overall evidence of a fall in the huge rural-urban differences, identified in the 1970s, in educational provision and access. As for outcomes, the latest reported rural and urban illiteracy rates were: China 26% and 12%; India, 55% and 25%; Egypt, 67% and 40%; Brazil, 31% and 11%. This is not just because rural households are poorer: in India in 1986-87 the literacy rate in the poorest quintile of urban households (50%) was above that of the second richest rural quintile (48%). Globally, these gaps have widened. The typical rural adult, surveyed in the 1960s or 1970s, had 1.4-2 times the urban adult illiteracy risk in the countries of North Africa and Asia; the ratio was 2-3.5 in Latin America.

On the health of the poor, poor people are less likely to report sick, because they expect to feel unwell, and anyway can seldom afford time off or health care. Objectively the poorest quintile have higher infant mortality rates where inequality is great and medical care mainly for those who pay. Recent infant mortality rates in the poorest (richest) quintile of households by consumption per equivalent adult were about 70 (25) per 1000 in
Brazil, 100 (40) in Nicaragua, 97 (52) in South Africa and 107 (62) in Côte d’Ivoire, but the gap was far smaller (though absolute rates were high) in Pakistan and Ghana. The disparities in child mortality rates were greater, for example, 116 (11) in Brazil and 155 (71) in South Africa.99

As for rural and urban health, in 12 developing countries, the ratio of rural to urban mortality from birth to age five rose from an average of 1.4 in the mid-1970s to 1.6 in the mid-1980s. As for the infant mortality rate (IMR), in most developing countries with good data, while both urban and rural IMRs were declining, the ratio of rural to urban risk was, until the late 1980s, high and stable or widening. In India, from 1970-75 to 1981-85, the rural IMR fell by 19.5% (to 113) and the urban IMR by 28.1% (to 64), but by 1990 the rates were 86 and 51 respectively, so that in the 1980s rural IMR decline accelerated. In China, ‘official’ urban and rural IMRs in 1957-88 fell, respectively, from 50.8 to 13.9 and from 89.1 to 23.6, that is, at similar rates.100

As for the nutritional rich-poor gap, a 10% rise in income is associated with a 1-4% rise in dietary energy intake in household surveys; the rise is higher among the poor, indicating that they, despite having the highest work-energy needs, are the most malnourished.

Rural-urban nutrition gaps are substantial and not narrowing. Though calorie intake per consumer unit does not differ much between rural and urban areas, rural people need more energy for work, travel, disease resistance and pregnancy, and have higher micronutrient deficiencies, impeding efficient energy utilization.

These different kinds of human capital deprivation reinforce each other’s impact on the rural and the poor. Among children of illiterate mothers, mean weight-for-age in Bangladesh rises from 67% of the United States minimum acceptable National Centre for Health Statistics (NCHS) standard in the poorest quintile to 69% in the richest, whereas with literate mothers the improvement is much more, from 65% to 75%. The interlocking disadvantages are passed on to the children of the rural, the poor, the unhealthy, the uneducated. The poor, and the rural among the poor, have higher child mortality, replacement fertility and thus child-to-worker and consumption-to-savings ratios. Uneducated women marry sooner, and have higher marital fertility. Their households are worse nourished, even at similar incomes, due to less knowledge of food and farming, higher worker/dependant ratios and more sibling competition. Where education is especially unequal (by region, gender or income group), malnutrition is higher than elsewhere, especially among small children (the most vulnerable), due to high fertility in uneducated households.102

More severe inequality in educational attainment in countries of Latin America and Africa than those of Asia explains about half their higher overall inequality.103 So higher rural-urban inequality of human assets in Africa, and intra-rural inequality in Latin America, account for much of the high poverty there.

Productivity and poverty impact of rural human capital for the rural poor

Public or NGO outlay to steer human capital assets to the rural and the poor is unjustified if the same outlay cuts poverty more when directed to other capital for the rural poor, or to human capital for the urban poor. Does schooling, sanitation or better nutrition, though bringing double the benefit when directed to the rural poor as to the urban non-poor, cost three times as much? Does it convey sufficient welfare, capabilities or productivity gains to the rural poor to justify the cost of steering it to them?

Education

Education is good at reducing poverty for rural people who can use it to get better work or income
from physical or natural capital, whether within farming or by leaving it; but it is much less so if they must stay where farm technology is sluggish. Where new technologies are rewarding, education speeds their adoption, often bringing large productivity and income gains for small farmers and farm workers. In Thailand four years’ education triples the chance that a farmer will use new chemical fertilizers; educated farmers in India are more likely to use credit, irrigation and improved seeds. However, in Africa education appears to have a mixed and, where favourable, small impact on agricultural productivity. Education speeds adoption of new agricultural technologies and of cash crops, for example, in Head’s efforts to help smallholders in Malawi to grow tobacco. Education can impart good farming practices in school; ease access to new information; facilitate access to others with information, like health professionals and extension agents; improve ability to make sense of new information; and so speed up innovation. This matters most during rapid change, as with the early Green Revolution in the Indian Punjab; then ability to master correctly new combinations of inputs and technologies can have high payoffs. But if there are few new opportunities, or if their benefits are confined to those with substantial fixed assets, education alone may do little to help the poor. Education raises the rural poor’s income only to the extent that they also have, or get, natural or physical assets or work yielding more if one is educated – and prices, policies, technologies or events raise demand for the products of the more educated poor, or make it more price-elastic.

This need not mean that the rural poor in agriculturally sluggish or dryland areas gain little from education. First, some such areas may be coming to show the best prospects for agricultural expansion given appropriate research. Second, adult education, which for demographic reasons must receive increasing emphasis in anti-poverty policy, can help the poor to organize and lobby to improve infrastructure, health care, production, or access to information and power; NGOs such as Bangladesh Rural Advancement Committee (BRAC) in Bangladesh, interacting with microcredit and adult literacy training, have played a major role (Box 3.11). Third, while the poor, to gain income from education, need to combine their new capabilities with other assets, work or technologies, these need not be rural or agricultural. Historically, education has reduced rural poverty mainly by helping people with few prospects in farming to leave it, and to seize non-rural or non-farm opportunities.

**Nutrition and health, children and the rural poor: a virtuous circle**

Human health assets comprise bodily and mental characteristics promoting longevity with full functioning, and resistance to (or rapid recovery from) illness and injury. The rural poor are especially handicapped by acute illness and injury (often untreated) in earning, learning and quitting poverty; and by chronic illness and injury due to unfavourable health-work-home and especially water-sanitation environments; and by low nutritional assets, such as height and lean body mass.

Inadequate food substantially reduced productivity of rural workers in India and cane-cutters in Guatemala, where calorie (rather than protein) shortage was the cause. For rural labourers in Sri Lanka, wages rose by 0.21% for each 1% rise in calorie intake. Anaemia has been found to reduce productivity and iron supplementation to raise it.

Rural workers’ incomes depend on the capacity to fight off illness, and on lifetime physical, learning and mental capacity and hence productivity when well. Both are much affected by child nutrition, including exposure to infections, mainly water-borne, that impede nutrient absorption. Caloric undernutrition and micronutrient shortage in childhood bring low height in adults. This reduces
market wages for adult cane-cutters in the Philippines. For men of the same height and caloric intake, greater body mass brings higher wages, though height has more effect.107 The nutrition-strength-productivity effects are much clearer, indeed there are thresholds,108 for the smallest (and poorest) adults than for others, and for those likely to do heavy physical work: the rural ultra-poor. Undernutrition also harms learning, schooling, and hence later productivity,109 again harming the rural poor most.110 Child ill-health and undernutrition are thus causes, not just effects, of rural income poverty. A virtuous circle emerges from targeting on the rural poorest outlays for better child nutrition: it brings better adult health, education and productivity, which further improve child nutrition. Yet even among the poor, calorie intake seldom rises by more than 4% when income rises by 10%. Direct approaches may be needed, notably interventions that help the poor cope with fluctuations in food supply. The IFAD/UNICEF-backed Andhra Pradesh Tribal Development Project in India (1991-99), established 230 grain banks and community nutrition workshops; and IFAD’s inputs to the Special Programme for Africa include improved village cereal storage in Chad, and education on nutrient-rich foods and improved preparation techniques in the Kwale and Kilifi District Development Project, Kenya. Targeted nutrition interventions111 can also be highly productive for the rural poor; increasing emphasis is now placed on micronutrients.112
Health and the rural poor

In Côte d’Ivoire and Ghana, an additional day per month of disabling illness brings a decline of 10% in male wages and of 3% in labour supply. Nutrition-linked diseases (especially dysentery) remain the main affliction of the rural poor, but they are also exposed to other physical risks to their human assets. Agricultural workers' injuries from sickles, snakes and scorpions, and ill-health due to pesticides, are common and often untreated. So are burns from open fires and pollution from indoor cow-dung stoves. Investments in new types of fuel or stoves can help solve this problem, as with kerosene stoves in rural Nicaragua.

As for chronic illness, in parts of Africa and (though less recognized) Asia, HIV/AIDS not only kills many - life expectancy in several Southern African countries has regressed to levels not seen since the 1960s - but also condemns others to leave work in order to care for the sick and the orphaned. HIV/AIDS is a disease of poverty in that poverty pushes men into single-sex migration, women into prostitution, and children into undernutrition and hence impaired immune response. HIV/AIDS, though thought of as mainly urban, is spreading faster in some rural areas of India; in much of Africa urban and rural prevalence rates are similar. Rural areas along truck routes, or sources of migrant labour to towns, are especially vulnerable, as are nomadic pastoralists and farm women with seasonally migrant husbands. Yet in rural areas the infrastructure for prevention programmes (information; AIDS tests; counselling; condom availability) is less developed. So too are treatment facilities. Yet rural families bear the main burden of care and costs. The burden of chronic rural sickness is also swollen by the spread of drug-irresponsive malaria and tuberculosis. Urban populations, tending to return to the village when sick or old, intensify the problem.

Any strategy for rural poverty reduction must include shifting asset formation towards building the health, education and nutrition of the rural poor, and away from concentration on tertiary urban health and education. But given resource scarcities, it is also essential to improve the efficiency and equity with which scarce resources for building rural human capital are used and maintained. Central issues include: reducing gender inequity in access to human capital assets; increasing user control over, and contribution to, providing such assets; and dealing with seasonality.

Human assets and the rural poor: addressing gender inequity and the new demographics

There are huge gaps between male and female educational access and literacy levels. These gaps are greater in rural areas, and greatest for the rural poor. Inequity helps cause inefficiency: female schooling does much more at the margin for income, poverty reduction, and child health and nutrition than extra male education. Women's lower adoption of agricultural innovations is due entirely to lower levels of education; at the same level, women farmers are as quick to adopt as men. Extra education raises household income more if it goes to females. Across Indian States in 1957-91, the responsiveness of poverty to initial female literacy was higher than to any other initial condition. Mothers' education is also associated with better child health in many studies, often holding income constant. Extra human capital for poor rural women and girls could well create a virtuous circle of better income, less poverty and better health and education, transmitted intergenerationally.

This is underlined by the better impact of female income upon subsequent child nutrition and education and the rising proportion of rural people, and household heads, who are women. The growing age of the workforce means that a large, growing majority of the workforce is already well past its childhood. Human capital formation, for cost-effective impact on instrumental benefits (especially employment and labour productivity),
must concentrate much more upon adults. The IFAD experience of rural female literacy programmes shows what can be done.

User fees and empowering the poor in health and education: helpful or perverse?

Decentralized user involvement in control over many public and NGO activities, despite the difficulty of ensuring that the poor have their say, improves participation, power, and often managerial efficiency. How does this apply to getting better human assets to the rural poor? It is not just poverty that makes so many of them work rather than attend a school or clinic, but, given the value of their working time, low school and clinic quality and their incapacity to improve it. Witness the contrast between rural school efficiency in South India and in Uttar Pradesh; in the latter case only, parents have little influence on teachers’ performance or even attendance, with appalling results.

In the 1980s user fees were widely thought to give consumers decentralized market power over health and education services, and to keep them going despite fiscal stringency. The effects of user fees on basic services for the rural poor have been, on balance, damaging. Without adequate exemption (targeting), user fees harm the poor; yet exemptions have proved very hard to manage cleanly and efficiently. Exemptions are absent in about one quarter of developing countries with user fees, and elsewhere seriously flawed by including the non-poor (such as health workers and the military) and excluding the rural poorest, or not reaching them in practice, as in Ghana and Zimbabwe. The poor are more likely to give up such a service when a fee is imposed or raised. Even if they do not, since they typically devote 70-80% of the value of consumption to food, they almost certainly cut their own, or their children’s, already inadequate nutrition to pay school or clinic fees.

Often user fees mean that treatment is delayed. In Zimbabwe, after the 1991 introduction of fees, the number of babies born premature increased by 10%. In four rural districts in Viet Nam, where fee exemption for the poor was ineffective, people delayed treatment and made less use of government health facilities (and the rich spent 3.5% of household income on health, compared with 19.3% for the very poor). In rural Kenya in 1989-90, curative out-patient attendance fell by over 30% after fees were introduced, and in-patient days by 20%. The poor reduced their use of health services most, as in rural Swaziland.

Similar findings apply to primary education: higher response by the rural than the urban, and by the poor than by the non-poor, to user fees. This led to declining school attendance in Zimbabwe, Malawi and Kenya, where nearly half the households in seven poor districts had at least one child who had dropped out due to inability to pay fees. In Ghana, Zimbabwe and Kenya, girls were more likely to be pulled out of school than boys, which is especially worrying given the higher private and social returns to their education.

Efficiency and equity effects apart, the revenue-generating potential of fees is small, and exemption of the poor is difficult. Credit is seldom feasible, let alone affordable, for school or health fees for the rural poor. As for insurance, middle-income countries with fairly dense and accountable public-service networks can operate with entitlement or exemption cards such as Chile’s ‘ficha CAS’, but elsewhere insurance cards such as Burundi’s Carte d’assurance maladie (CAM) have had serious problems; in the mainly rural Mayinga province they recruited only 23% of households, largely self-selected and higher-risk, making self-financing infeasible and risk-sharing difficult.

The free provision, from China through Sri Lanka to Costa Rica, of much basic health and education; the sharp improvements in life expectancy and quality, and in poverty reduction,
so generated; the disappointing revenues from user fees; the difficulties of exemption and insurance; above all the impact on the poor, the rural, and women, all suggest that fees should not be applied to basic services in low-income countries. However, it makes sense to self-target or indicator-target some services on those at risk, such as nutrition supplements for children with faltering growth. And the slack-season or spare-time work of rural communities, even the poorest, can be used to maintain, improve, or even construct, rural clinics or schools.

**Conclusions and policy implications**

What makes an asset pro-poor? Typically, labour-intensity; capacity to build marketable skills; equal access for women and minorities; low seasonal and annual variation and risk; and focus on producing items that loom large in poor people’s budgets, such as staple foods. Small and divisible assets are easier for the poor to acquire and manage. Fortunately, for important forms of rural asset, above all farmland, small scale brings advantages, such as low labour supervision cost and hands-on family-level overview. The persistently large share of farmland in smallholdings, and its labour-intensity combined with low unit costs in most branches of farming, provide strong arguments for (a) stimulating smaller and more equal landholdings, (b) steering more assets, especially education and water-yielding equipment, to rural areas, and (c) tackling the high risk and inadequate female access that limit the poor’s gains from many rural assets.

Within rural areas, some countries such as China suffer from asset poverty mainly due to regional inequality; some, such as South Africa and Brazil, mainly due to land inequality within regions; and others, such as Ethiopia and Bangladesh, mainly due to low average per-person assets and GDP. But for many assets, notably human capital, rural-urban maldistribution is in many countries a main cause of asset poverty, largely because governments and donors overlook rural and agricultural issues. In changing that, three main sorts of asset are most relevant to rural poverty reduction: farmland, water-yielding assets, and human capital.

**Farmland**

Over two thirds of the income of the rural poor is from farming. Most of the rest depends for growth on linkages to farming. Most of the rural poor still control some farmland; although the proportion mainly dependent on hired labour is rising, they too gain if land control is more equal and thus more labour-intensive. Land deprivation is strongly linked to poverty and vulnerability, and brings powerlessness, especially for ethnic minorities long compressed into remote and marginal lands.

Land redistribution to more equal family holdings has been massive, and has massively cut poverty. In much of Latin America and Eastern and Southern Africa, great land inequality still turns middle-income rural averages into widespread rural poverty, while probably reducing efficiency and growth. In most transitional economies much land remains in big state and collective farms; this harms the poor by being inefficient as well as reducing employment.

Yet classical land redistribution has slowed since the mid-1980s, partly because it was often unduly statist, centralized, slow to distribute land to the poor, insufficiently concerned with competitive inputs and services for new smallholders, and liable to create uncertain property rights. There is now a shift towards decentralized, substantially compensatory and market-led reform. Policy can help by removing selective subsidies to large farmers and their inputs, raising their incentive to sell land to the poor, and by direct donor support to appropriate land redistribution. Former large farmers can often profitably provide financial, marketing or processing services competitively to post-reform smallholders.
Given the distribution of land, the poor usually lose from laws against voluntary tenancy or communal tenure systems. Modes of formal and informal titling, tenure and tenancy are usually efficient forms of avoiding highly local transaction costs, provided the poor are not exposed to the market power of a few large landlords.

Neither unreformed nor reformed systems usually give women equal access to land. This is unjust, inefficient and bad for the health and education of children. Priorities in land reform should be: land for women; regions where extreme land inequality is the main constraint on poverty reduction; support services for post-reform smallholders; and incentives to sustainable post-reform farming systems.

**Water-yielding assets**

Increasing water scarcity coincides with big farm water subsidies: hence the pressure to divert water from farming. Yet the poverty-reducing Green Revolution was largely confined to water-controlled lands. The poor share even less in farm water than in farmland, and suffer serious drinking-water shortages. While persistent subsidy is wrong (and anti-poor), and while rural water-yielding assets should be redistributed and the economic efficiency of rural water use improved, unselective water transfer to urban areas would worsen rural poverty and pressure on marginal drylands.

Small farmer-controlled water-yielding assets irrigate large areas and are often pro-poor, but are not the whole answer. With large water-yielding assets, the non-poor often get special access, exacerbated for women by intra-household problems. Yet some projects have overcome such difficulties. Even if much asset management is centralized, water markets and full-cost pricing can assist access, instead, to the water itself.

Water-yielding assets can be redistributed to the poor by (a) restricting overpumping; (b) responding to poor user needs, for example, by supporting water harvesting; (c) credit, technical help or hydrological data to help the poor invest in wells; (d) facilitating private rent or sale of water-yielding assets to the poor; (e) substitution of employment for water in irrigation management and maintenance; (f) water user associations, representing the poor, to help control and manage systems; and (g) removing water subsidies, safeguarding the poor by allowing user groups to pay by maintenance work.

Drinking-water priorities reflect overwhelmingly urban interests, yet rural water deficiency is greater and harms health more. Cleaner water is more cost-effective in improving rural health and productivity if it complements other inputs; avoids technology dependent on unreliable external fuel, spares and maintenance; and trains and pays community maintainers. Finally, in some countries the rural poor's share of controlled water for production and clean drinking water is so tiny that substantial, open redistribution from urban and rich rural people is inescapable.

**Human assets**

Better health, education and nutrition help the escape from rural poverty by raising, first, innovativeness, income and food production of farmers and workers in low-income areas; and second, mobility to (and earning capacity from) cash-crops, rural non-farm production and urban work. In these roles human assets complement others: if the economy, physical capital, technology and employment stagnate, extra human assets for the poor may simply shift income among them. Moreover, while education, health and nutrition assets in developing countries have been improving unevenly and often slowly, the huge rich-poor and urban-rural disparities have mostly stagnated or widened. Shifts of human-asset-improving outlays to the rural poor, especially women, usually raise cost-effectiveness, partly because of mutual reinforcement among better
health, nutrition and learning, and smaller families, less poverty, and higher productivity.

Women's education disadvantage, greatest for the rural poor, explains low female innovation. If corrected, it cost-effectively improves child health, education and nutrition. The rising proportion of women farmers increases these prospects. Nutrition improvement raises subsequent learning, productivity and wage-rates, and cuts risk of income loss due to illness; it does most for the worst-off. The rural poor's gains from extra health can depend on complementary nutrition and schooling. The demographic transition, by sharply raising the proportion of workers 30 years hence who are aged over 15 now, implies productivity gains from shifting education and health assets towards poor adults.

Decentralized responsibility for asset formation in health, education and nutrition increases returns to the poor. But user fees for primary and preventive services in low-income countries have proved counter-productive. Exempting the poorest is seldom feasible; children suffer if they are denied basic human assets.

Other assets matter for rural poverty reduction: but they cannot replace policy to increase farmland, water and human assets of the rural poor, sometimes by redistribution.

Rural non-farm assets and work are large, growing parts of rural activity, but often mainly for the non-poor. Distress diversification from stagnant farming into languishing crafts seldom helps the poor. Growth linkages to dynamic sectors often do, but usually depend on prior, shared farm growth.

Livestock, especially small stock, can be crucial to the income, if seldom the diet, of many rural poor. The poor need institutions to acquire, manage and trade livestock and their products, and to help avoid crises in animal feed. Cattle ownership is often heavily skewed against the poor and women. Poverty reduction is advanced by refocusing livestock public-goods provision on small stock; by reducing artificial barriers to large stock ownership by the poor; and by furthering the practices by which the poor control and manage livestock they do not own.

Housing assets of the rural poor are often even worse than for the urban poor, yet almost all habitat policy is urban. The rural poor's houses need frequent repair. Traditional materials are getting scarcer, and need research on better durability and access. Public works can include off-season work in small local firms to test new house designs. Redistribution and service support for rural site-and-service and home gardens may also be feasible.

Transport and communications assets are often unsuitable for private or joint producer control by the poor. But the poor's weak access as consumers and producers carries huge handicaps and costs, both in market access and, especially for women, in domestic and inter-village farm, fuel and water transport. Non-motorized vehicles can greatly cut such costs, and are easily maintained.

The rural poor want assets to raise income and to provide buffers against shocks. The poor are more likely to control some sorts of assets than others; but farmland, water-yielding assets, and human assets are especially crucial. Pro-poor policy should be directed at improving access to and returns from assets. For land and water this may require redistribution; access to livestock, human capital and non-farm activities require mainly greater opportunity. Gender inequality in access to assets needs to be addressed in policy, and monitored. Rural people in most developing countries enjoy less, per head, of most sorts of assets allocable between city and countryside, especially human capital; these gaps, which in general are not falling, are inefficient as well as inequitable.
Annex 3.1
Non-distributive land options: collective, state and cooperative farms, titling communal land, tenancy restrictions

State, collective and cooperative farming
Attempts to compel cooperative asset use are self-defeating, and cooperative use of farmland is seldom economic or preferred. However, there is scope for state or NGO help to rural people in cooperative management of assets (with scale economies) in use on farmland, especially where it is only managerial costs (including the costs of trust) that stop farmers from choosing cooperative institutions. Such help for cooperative farm savings for joint irrigation in the Mexican ejido proved useful to the poor. Similarly some 60,000 of the 300,000-odd egalitarian family farmers, created out of the Armenian decollectivization in the early 1990s, chose to work through optional (but misnamed) ‘collected farms’, mainly for asset purchase, leasing arrangements, farm management advice and the consolidation and exchange of fragments. Though the poorest may be better reached if such cooperation is supported among landless suppliers of the input (for example, water from IFAD-supported Proshika groups in Bangladesh), state assistance to farmers can be helpful in bearing the managerial costs and externalities of otherwise desired joint activity. However, outside enforcement of joint (or state) farm activity not desired by the farmers is not land reform, but land ‘deform’. It harms the rural poor.

Communal tenure and titling
This is also true of enforcement of individual private property, if it runs against the grain of economics and of farmers’ wishes. Where low-grade land is fairly plentiful and fencing expensive, common grazing rights have evolved, and cropland – while almost always farmed individually, with private usufruct rights – is owned communally. Rights to sell, rent or bequeath such land are highly variable and adapted to local situations, but often limited or absent. Advocates of private titling argue that communal tenure impedes farmers’ borrowing, because land is not acceptable as collateral; induces them to ‘soil-mine’ and degrade land (since in future years it may not be theirs to farm); and diffuses and weakens demand for innovations. However, in practice, communal tenure does not reduce production or efficiency, or even impede borrowing, as compared with freehold, in most conditions in Africa. Communal tenure is unlikely to reduce investment incentives, due to low risk of eviction.

The balance between individual and communal tenure rights, unlike the distribution of power and control over scarce land, is mainly an effect, not a cause, of the prospects for profitable agricultural innovation, borrowing and conservation. Private landholding normally develops in response to greater land scarcity, new technical prospects, or different sorts of gain from conservation. But the adjustment involves conflicts of interest, transaction costs, and hence friction and delay, which can justify public action to support land titling where most of the poor want it. But there is no case for enforced decommunalization or titling. This can disadvantage women, tribes with unwritten tenure records, and other vulnerable groups, without enhancing efficiency, as in Uganda. In Rajasthan, India, Jodha shows that privatization of common grazing lands was less favourable to the poor than use of the commons had been before titling, so that the process cost the poor substantial parts of income. Shanmugarathnam shows that privatizing and titling reforms on grazing land disadvantaged pastoralists with small ruminants, mainly the poor.

There are exceptions. Titling can benefit the poor through improving the security of smaller, less well-documented holdings, since ‘it is the holdings of [small farmers] that are especially likely to be untitled’. Where much land starts in the public domain, titling, as in Honduras, can help ensure that poor, not only rich, purchasers get security. W here landlords are shifting tenants around, to stop them establishing the right to buy land under tenancy regulations, registration of title – as in West Bengal’s ‘Operation Barga’ – is a useful adjunct to land reform. But caution is needed. The above examples of titling that increases poor people’s shares in land do not mainly come from areas of traditional communal tenure. There, the search for titling usually comes from better-off
farmers and ‘may offer more advantage to large ... farmers who have better access to markets’. In communal areas, imposed removal of restraints on land sale can harm the poor, without efficiency gains. Unlike land-lease markets, land-sale markets, especially in progressive farm areas, tend on balance to transfer assets from poor to non-poor. Higher farm efficiency does often require transfer of farming to better, nearer, or differently resourced farmers; but this can often be achieved by an emerging lease market, even without titling.

Control of land may best be redistributed not as ownership or title, but as common village or regional tenure – with secure individual usufruct rights. In China, this was linked to big increases in output and productivity. In Niger, land tenure insecurity is associated with reduced application of manure and hence lower output. In Ghana, density of tree planting is positively associated with tenure security, but not necessarily ownership.

Tenancy and tenancy reform

The extent, type (sharecropping or fixed-rent) and terms of tenancy, such as collective, private and communal operation and tenure, are mainly consequences of agro-economic opportunity and incentives, and the initial distribution of control and power over land. If these causes do not change in the poor's favour, laws to restrict the type, extent or terms of tenancy seldom help the poor. Indeed, they are often counter-productive, inducing landlords to resume tenanted land for personal farming – usually larger-scale, more mechanized and less employment-intensive.

Tenancy generally transfers farmland to smaller holdings. In India, tenancy reallocates land from the large and middle farmers to the marginal farmers, leading to greater utilisation of land and labour; in the mid-1980s some 19% of rural households leased in land, of which over 90% owned no land or below 1 ha – and more such households would lease land if legal restrictions were eased. This flow of rented land to the poor is confirmed in a district study. Such flows allow poor households to sell and improve their managerial skills; to obtain income from land control; to save money to buy land later; and to adjust their labour inputs, normally upwards, to suit their preferences. Also, rented holdings, being usually smaller, typically hire more labour per hectare than owned holdings. Efficiency losses due to type of tenure – for example, sharecropping – are usually prevented by explicit or implicit landlord-tenant deals. Usually, pro-poor agrarian policy should encourage tenancy (while creating an environment of greater equality in land access and political rights), not, as in the past, discourage it or restrict its types or terms. The fact that barely 5% of farmland in Latin America is tenanted indicates overemphasis on restricting or regulating tenancies, instead of on implementing or obtaining consensus for land redistribution.

Tenancy laws and restrictions, for example, to improve sharecroppers’ terms, can help the poor, but only where power shifts sufficiently in favour of the poor to render credible the enforcement of ownership ceilings upon landlords who respond by eviction and resumption of large farms for personal cultivation. Land reform in Japan, the Republic of Korea, Taiwan and West Bengal consisted largely of tenancy restrictions, especially on sharecropping, yet greatly advanced equity and efficiency because it accompanied already widely dispersed land ownership and the reality or threat of effective implementation of ceilings legislation, so landlords could not resume large areas of land for personal cultivation. Further, the rural poor had already acquired considerable power. Operation Barga in West Bengal, India, after 1977 secured small tenancies and thus caused rapid growth in agricultural activity in the early 1980s. Similarly, laws that set ceilings on rentals (especially for sharecropping) or on rented land, or entitle the tillers to buy it, usually cause evictions; but in Taiwan in 1949-53 such laws durably redistributed farm-land to the poor, because evictions were prevented by credible ceilings for owned land.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>0.725</td>
<td>0.7963</td>
<td>0.75</td>
<td>0.72s</td>
<td>0.6705</td>
<td></td>
</tr>
<tr>
<td>American Samoa</td>
<td>0.5716</td>
<td>0.7963</td>
<td>0.75</td>
<td>0.72s</td>
<td>0.6705</td>
<td></td>
</tr>
<tr>
<td>Antigua</td>
<td>0.8625</td>
<td>0.7351</td>
<td>0.873w</td>
<td>0.8598</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>0.8391</td>
<td>0.8321</td>
<td>0.6953</td>
<td>0.8206</td>
<td>0.9032</td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>0.7100</td>
<td>0.6953</td>
<td>0.6773</td>
<td>0.8722</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahamas</td>
<td>0.47;</td>
<td>0.57</td>
<td>0.4187</td>
<td>0.549e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>0.61</td>
<td>0.57</td>
<td>0.4187</td>
<td>0.549e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbados</td>
<td></td>
<td>0.8996</td>
<td></td>
<td></td>
<td></td>
<td>0.9284</td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td>0.6137</td>
<td>0.5942</td>
<td>0.5668</td>
<td>0.5639</td>
<td></td>
</tr>
<tr>
<td>Belize</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.7677</td>
</tr>
<tr>
<td>Bolivia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.4369</td>
</tr>
<tr>
<td>Botswana</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>0.8329</td>
<td>0.8347</td>
<td>0.837</td>
<td>0.8521</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brunei</td>
<td>0.8391</td>
<td>0.8321</td>
<td>0.6953</td>
<td>0.8206</td>
<td>0.9032</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>0.534</td>
<td>0.4187</td>
<td>0.549e</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>0.6772</td>
<td>0.9384</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominican Rep</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominica</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecuador</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>0.7144</td>
<td>0.8642</td>
<td>0.8155</td>
<td>0.5531</td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Salvador</td>
<td>0.8309</td>
<td>0.8642</td>
<td>0.8155</td>
<td>0.5531</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>0.6748</td>
<td>0.5391</td>
<td>0.5136</td>
<td>0.5142(87)</td>
<td>0.6674(90)</td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>0.5984</td>
<td>0.5007</td>
<td>0.4388</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>0.5984</td>
<td>0.5007</td>
<td>0.4388</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>0.5984</td>
<td>0.5007</td>
<td>0.4388</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>0.6748</td>
<td>0.5391</td>
<td>0.5136</td>
<td>0.5142(87)</td>
<td>0.6674(90)</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>0.6748</td>
<td>0.5391</td>
<td>0.5136</td>
<td>0.5142(87)</td>
<td>0.6674(90)</td>
<td></td>
</tr>
<tr>
<td>Grenada</td>
<td>0.7808</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guadeloupe</td>
<td>0.7808</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guatemala</td>
<td>0.8588</td>
<td>0.828</td>
<td>0.8484</td>
<td>0.7356</td>
<td>0.6099</td>
<td></td>
</tr>
<tr>
<td>Guinea</td>
<td>0.8588</td>
<td>0.828</td>
<td>0.8484</td>
<td>0.7356</td>
<td>0.6099</td>
<td></td>
</tr>
<tr>
<td>Guyana</td>
<td>0.8588</td>
<td>0.828</td>
<td>0.8484</td>
<td>0.7356</td>
<td>0.6099</td>
<td></td>
</tr>
<tr>
<td>Honduras</td>
<td>0.7512</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.7356</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.5636</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.6099</td>
</tr>
</tbody>
</table>

(cont'd)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>0.6781(54)</td>
<td>0.59</td>
<td>0.6144</td>
<td>0.5924</td>
<td>0.5829(60)</td>
<td>0.64e(70)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.5535</td>
<td>0.627(63)</td>
<td>0.5559</td>
<td>0.53s(73)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>0.623</td>
<td>0.62</td>
<td>0.53s(73)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>0.7934(52)</td>
<td>0.8829(58)</td>
<td>0.614</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>0.5702</td>
<td>0.5943</td>
<td>0.902(58)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>0.8461</td>
<td>0.3512</td>
<td>0.902(58)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>0.7452</td>
<td>0.7622</td>
<td>0.7386</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>0.7909</td>
<td>0.8059</td>
<td>0.4229</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td>0.3904</td>
<td>0.4114</td>
<td>0.5212</td>
<td>0.3821</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>0.8184</td>
<td>0.6671</td>
<td>0.6858</td>
<td>0.690</td>
<td>0.770e</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>0.822</td>
<td>0.7381</td>
<td>0.7459(80)</td>
<td>0.81(77)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>0.5335(61)</td>
<td>0.3512</td>
<td>0.3108(70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>0.6862</td>
<td>0.362</td>
<td>0.3512</td>
<td>0.7635</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>0.3738</td>
<td>0.362</td>
<td>0.3512</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesotho</td>
<td>0.3738</td>
<td>0.362</td>
<td>0.7635</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberia</td>
<td>0.481</td>
<td>0.2905</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luxemburg</td>
<td>0.6861</td>
<td>0.4706</td>
<td>0.7381</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libya</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madagascar</td>
<td>0.5915</td>
<td>0.6216</td>
<td>0.747</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martinique</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauritania</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myanmar</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicaragua</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panama</td>
<td>0.352</td>
<td>0.4493</td>
<td>0.7381</td>
<td>0.5013</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(cont'd)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paraguay</td>
<td>0.8583</td>
<td>0.938</td>
<td>0.9212</td>
<td>0.9281</td>
<td>0.939</td>
<td>0.7843</td>
</tr>
<tr>
<td>Peru</td>
<td>0.935</td>
<td>0.9355</td>
<td>0.9105</td>
<td>0.766(72)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philippines</td>
<td>0.5063</td>
<td>0.5076</td>
<td>0.580w</td>
<td>0.5093(71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>0.5301</td>
<td>0.4638</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port. Guinea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>0.7133</td>
<td></td>
<td></td>
<td>0.716</td>
<td>0.7249</td>
<td></td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>0.7253</td>
<td>0.7603</td>
<td>0.7749</td>
<td>0.7762</td>
<td>0.7569</td>
<td></td>
</tr>
<tr>
<td>Reunion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.6628</td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>0.4927</td>
<td></td>
<td></td>
<td>0.79</td>
<td>0.8262</td>
<td></td>
</tr>
<tr>
<td>Seychelles</td>
<td>0.9272</td>
<td></td>
<td></td>
<td>0.8206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td></td>
<td></td>
<td></td>
<td>0.4432</td>
<td>0.4774</td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>0.701</td>
<td>0.195</td>
<td>0.384</td>
<td>0.301</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>0.729</td>
<td>0.30s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>0.8368</td>
<td></td>
<td></td>
<td>0.8459</td>
<td>0.8583</td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>0.665</td>
<td></td>
<td></td>
<td>0.6670(73)</td>
<td>0.619e</td>
<td>0.51e(73)</td>
</tr>
<tr>
<td>Sudan</td>
<td></td>
<td></td>
<td>0.5765</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suriname</td>
<td>0.7289</td>
<td>0.6935</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swaziland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.3032</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>0.7568</td>
<td>0.5082</td>
<td>0.2275(71)</td>
<td>0.5092(80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.4500</td>
<td>0.4678</td>
<td></td>
<td>0.5159</td>
<td>0.4843</td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.7899</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>0.455</td>
<td>0.4585</td>
<td>0.452</td>
<td>0.366</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Togo</td>
<td></td>
<td></td>
<td>0.4792(61)</td>
<td>0.5244(70)</td>
<td>0.41(70)</td>
<td>0.6838</td>
</tr>
<tr>
<td>Trinidad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>0.6456</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>0.6027</td>
<td>0.611w</td>
<td>0.5779</td>
<td>0.5984</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.K.</td>
<td>0.7206</td>
<td>0.7166</td>
<td>0.6939</td>
<td>0.6754</td>
<td>0.6214</td>
<td></td>
</tr>
<tr>
<td>U.S.A.</td>
<td>0.7035</td>
<td>0.7132</td>
<td>0.7165</td>
<td>0.7455</td>
<td>0.7536</td>
<td></td>
</tr>
<tr>
<td>Uganda</td>
<td>0.5079</td>
<td>0.485</td>
<td></td>
<td></td>
<td>0.5896</td>
<td></td>
</tr>
<tr>
<td>Uruguay</td>
<td>0.82</td>
<td>0.8147</td>
<td>0.8034</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venezuela</td>
<td>0.927</td>
<td>0.9244</td>
<td>0.9096</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>0.5823</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8786</td>
</tr>
<tr>
<td>Virgin Islands</td>
<td>0.8515</td>
<td>0.5863</td>
<td></td>
<td></td>
<td>0.6648</td>
<td></td>
</tr>
<tr>
<td>Yemen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>0.6203(51)</td>
<td>0.5181(60)</td>
<td>0.5641</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zaire</td>
<td></td>
<td></td>
<td></td>
<td>0.5915</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: el-Ghonemy (1990) unless otherwise stated. Where any confusion is possible data from el-Ghonemy (1990) are suffixed e. Data in the 1960 column are from Berry and Cline (1979: p38-9) unless otherwise stated. Data suffixed w are from Berry and Cline (1979: p41-2). Data suffixed s are from Arulpragasam (1990: p13)
Endnotes

1 This chapter excludes financial institutions – a source of borrowing for asset acquisition and a major focus of IFAD’s work – because the poor do not borrow mainly to acquire assets. Likewise, it excludes ‘social capital’, i.e. institutions to increase and safeguard trust in social and economic transactions, since, however crucial to development, it differs radically from other assets. Both are dealt with in Chapter 6.

2 This is related to selection bias. Suppose some poor people, who obtain animals under a loan/subsidy scheme, escape poverty faster than others who do not participate. Such loans can be said to reduce poverty only if we allow for the initial endowments (skills, water access, etc.) of participants in the scheme, as compared with non-participants. Households selected to own livestock, or self-selecting to acquire it, tend to have initial endowments that render them relatively ‘good at’ managing it. If we do not allow for such selection bias, we overstate the poverty-reducing impact of assets and misjudge the balance of advantage among asset types (Morduch 1999; Haddad et al. 2000a; see also World Bank 2000a).

3 Pathak et al. 1977.

4 Allowing for rich households’ smaller size (Sarvekshana 1979). Distribution in India has hardly changed since (Jha 1999), and is less unequal than in most developing countries (Deininger and Squire 1996).

5 World Bank: database on Demographic and Health Surveys.

6 Eastwood and Lipton 2000.


8 Demand for farm labour grows fastest when agricultural land, and growth, are based on fairly equal small farms. Large farms have much lower labour/land ratios, and are more likely to grow capital-intensively (Binswanger et al. 1995; Lipton 1983b). Demand for rural non-farm products and labour grows fastest when local agriculture – above all, small-scale farming – grows rapidly, raising local demand for farm tools, farm processing, and especially consumer services like construction, trade and transport (Bell et al. 1982; M alor 1976; Hazzel and Roell 1983; Hazzel and Ramasamy 1991; Fisher et al. 1997; M echarla 2000).

9 The developing world’s share of total population mainly dependent on agriculture was 58% in 1990 and is projected to fall to 47% in 2010. By regions, respective data are: South Asia 60 (50); sub-Saharan Africa 69 (58); East and South-East Asia (including China) 51 (40); and Latin America and the Caribbean 26 (17) (FAO STAT 1998).

10 Reardon et al. 2000.


12 Binswanger et al. 1995.


14 Singh 1990.

15 Psacharopoulos and Patrinos 1993.


17 Carter 2000.

18 Kanbur and Lustig 1999.

19 M itra 1978.


22 For references to these four points see, respectively, (1) Julka and Sharma 1989; (2) Bhalla and Roy 1988, O berai 1988, and Lipton 1985; (3) Lipton, 1985: 9 and references, Christiansen 1999, Lipton and Ravallion 1995, and Ellis 1998; and (4) Agarwal 1994.

23 Bell 1990; Thiesenhusen 1989; Lipton 1983b.


28 Lieten 1996.

29 Besley and Burgess 1998.

30 Tyler et al. 1993.


37 Agarwal 1994. As the proportion of old persons grows (even in poor populations with weak social safety-nets), this becomes more important for poverty reduction,
because of women's greater survival prospects into old age. On the parlous state of widow-headed households in India, see Drèze and Srinivasan 1995.

38 For evidence on these three points, see respectively Alderman et al. 1995; Haddad et al. 1997; and Kennedy and Peters 1992.


40 Agarwal 1998a.

41 For evidence see, respectively, Ncube et al. 1997; Rose 1998; Deere 1987, on Latin America; Gupta 1993; Agarwal 1994.

42 Agarwal 1994.

43 IFAD 1999c.


46 Kurnia et al. 1999.


48 For evidence on this paragraph see Bhalla and Roy 1988; Narain and Roy 1980; Mollinga 1998; Wade 1975.


51 India: Narain and Roy 1980; Latin America: www.cgiar.org/irri/riceweb/g_overlatin.htm (CIAT 2000); the Philippines, and support for projects to improve farmers' water management: IFAD 1994a.

52 For successes, see Ostrom 1990.

53 Low maintenance is due partly to lack of incentives. Where many farmers share the same system, each has less incentive to maintain it than if one farmer is the sole owner/user. Water markets can give farmers an incentive to maintain the system. Alternatively, development of an institution responsible for water distribution and management can ensure maintenance.


56 IFAD 1999b: 43.

57 Such as a given share per unit of irrigable land, or depending upon crop grown where farmers negotiate timing.

58 M artorell 1995.

59 Esrey et al. 1990.


61 Increased quantity of water means that food may be prepared more often and that hygiene standards in the household may be improved through bathing, washing clothes, washing dishes and cleaning the house.


63 IFAD 1999c.

64 Churchill et al. 1987.

65 VLOM: Reynolds, 1992; M organ, 1993; IFAD, 1994c.


69 IFAD experience suggests that most of Eastern and Southern Africa is an exception, though transhumant herders still loom large among the poor in Kenya and Botswana.

70 Pingali et al. 1987.

71 IFAD 1994a.

72 In The Gambia, small stock are a store of wealth, used to buy grain or to ‘save’ and later exchange for cattle (Itty et al. 1997). For a Tanzanian case of cattle as a hedge against inflation and devaluation, see Gijisman and Rusamsi 1991.

73 Simmons 1981.

74 Gittinger et al. 1990.

75 Dercon 1998: 2, on Ethiopia.

76 Average number of livestock: landless (2), marginal (<1ha = 4), small (1-2ha = 5), medium (2-4ha = 6), large (4+ha = 7).


78 Delgado 1999.


80 It was motivated partly by a misperception (Sidahmed 2000): that most common lands were overgrazed. Even if they were, ranching would not help; private ranchers, subsidized to improve their herds' condition and hence increase offspring, avoid overgrazing their ranches by shifting offspring back to the commons.

81 Thomas-Slayter and Bhatt 1994.

82 On India's RNFS, FAO 1998a, and Fisher et al. 1997;
in Latin America, FAO 1998a; in Africa and overall, Reardon 1997.


84 Binswanger et al. 1993.

85 Kingsbury pers. comm.


87 Hazell and Ramasamy 1991, Binswanger.

88 Lipton 1994, Microsoft's Bill Gates's massive support for research into communications revolution was of limited relevance. Though some 2.5 million such homes are damaged annually by natural disaster, mud has benefits compared with modern materials, being cheap, nearby, ventilated, durable where there are few heavy rainstorms, and manageable with family (or local construction) skills (M athur 1989; Satya Sundaram 1989).

89 Murthy 1989; Mathur 1989.

90 Though some 2.5 million such homes are damaged annually by natural disaster, mud has benefits compared with modern materials, being cheap, nearby, ventilated, durable where there are few heavy rainstorms, and manageable with family (or local construction) skills (M athur 1989; Satya Sundaram 1989).

91 Herring 1983.

92 Barwell and Barwell 1993; Barwell 1996; Heidemann.

93 Microsoft's Bill Gates's massive support for research into communications revolution was of limited relevance. Though some 2.5 million such homes are damaged annually by natural disaster, mud has benefits compared with modern materials, being cheap, nearby, ventilated, durable where there are few heavy rainstorms, and manageable with family (or local construction) skills (M athur 1989; Satya Sundaram 1989).

94 Binswanger.

95 Alderman and Garcia 1993; Thomas 1986.

96 Basta et al. 2000, Fig. 5, Jalan and Ravallion 1999 (China), H addad and Ahmed 1999 (Egypt), M C Culloch and Baulch 1999 (Pakistan) and M alucco et al. 1999b (South Africa). O n rural-urban gaps: Lipton 1977; D reze and G azdar 1997: 81 (on India); Eastwood and Lipton 2000.

97 On educational gaps: Asia, Osmani and Lipton 1997; rich-poor: H addad et al. 2000, Fig. 5, Jalan and Ravallion 1999 (China), H addad and Ahmed 1999 (Egypt), M C Culloch and Baulch 1999 (Pakistan) and M alucco et al. 1999b (South Africa). O n rural-urban gaps: Lipton 1977; D reze and G azdar 1997: 81 (on India); Eastwood and Lipton 2000.

98 On rural and urban health: Sastry 1997; on IM R: R ajan 1993: 172, Goyal 1994: 104. Outside estimates for China are higher, but not split into urban and rural (Bhalla 1995: 237). Africa shows a large, persisting anti-rural health bias. In M alawi rural child mortality declined from 360 to 261 in 1972-84; the urban rate, from 239 to 121 (Palamuleni 1994: 72). In Cameron in 1962-76 the remote rural areas and the capital city showed the slowest IM R falls (De fo 1996: 411). In T he Congo in 1985-92, a main predictor of child mortality risk - low birthweight - increased from 12% to 29% in rural areas, but from 12% to 16% in urban areas (World Bank 1997).

99 World Bank, 2000b.

100 On rural and urban health: Sastry 1997; on IM R: R ajan 1993: 112, Goyal 1994: 104. Outside estimates for China are higher, but not split into urban and rural (Bhalla 1995: 237). Africa shows a large, persisting anti-rural health bias. In M alawi rural child mortality declined from 360 to 261 in 1972-84; the urban rate, from 239 to 121 (Palamuleni 1994: 72). In Cameron in 1962-76 the remote rural areas and the capital city showed the slowest IM R falls (De fo 1996: 411). In T he Congo in 1985-92, a main predictor of child mortality risk - low birthweight - increased from 12% to 29% in rural areas, but from 12% to 16% in urban areas (World Bank 1997).


103 Checchi 2000.


105 Lianm 2000.


109 Combining such costs of chronic deprivation due to child undernutrition with those of current undernutrition, H orton (1999) estimates forgone annual GDP from iron deficiency in childhood and from iodine and protein energy malnutrition in adults to be over 5% in Pakistan. For Bangladesh, the cost of iron deficiency in children alone is nearly 2% of GDP.

110 Neonatal undernutrition damages later cognitive function (Lucas et al. 1998); hence nutritional supplementation and stimulation of stunted children aged 9-24 months have independent and additive impacts on the development of the children aged 7-8 years (M cGregor et al. 1997). At the mean of a nationally representative sample from Ghana, a 10% increase in stunting causes a 3.5% increase in age of first enrolment at school (Glewwe and Jacoby 1995).

111 Berg 1987.

112 Deficient Vitamin A, iron and iodine seriously damage the poor's human capital. Vitamin A deficiency is normally responsive to dietary diversification and hence to major poverty reduction, but iodine deficiency is mainly localized in leached upland soils (and has been highly responsive to salt fortification). Anaemia – which cuts physical productivity and raises maternal mortality among over 2 billion people - has, alone of the deficiency conditions, shown no decline during recent decades. See FAO 2000.

113 Schultz and T ansel 1997.


115 Lipton and Osmani 1997; Quisumbing 1996; Estudillo and Otsuka 1999; Datt and Ravallion 1997; Behrman and Deolilark 1988; Strauss and Thomas 1995; Schultz 1999.
Payment does improve consumer involvement and control. There is a strong case for full-cost pricing of state services that enhance earning power mainly for the already well-off, e.g. university degrees, or residence costs in teaching hospitals; it is common, but unreasonable, for the state to give away or subsidize such largely urban elite services while charging user fees for basic health and education, especially in rural areas where both such services and their users are relatively poor.

Huffman and Steel 1995.


Compulsion of collective, state or commune farms was motivated mainly by the search for economies of scale and by a wish to concentrate farming into points where food or timber could be cheaply extracted for urban use. These motives suggest that such modes of farm tenure are unlikely to help the poor, and also explain their near-universal failure. Forced collective or state farming helped cause millions of famine deaths in the Ukraine in 1931-35 and China in 1960-63, and tens of thousands in Ethiopia, Mozambique and elsewhere in Africa in the 1970s and 1980s. The objection is not to cooperation but to its top-down enforcement, inappropriate application to farmland, and use for extraction. If farmers and workers are permitted to reorder collective or cooperative assets, as in much of Latin America, they often prefer smallish cooperatives for assets with scale economies (milk-sheds, tractors); but for farmland they 'vote with their feet' for private, usually small-scale and equal, management (Thiesenhusen 1989: 497; Dornier 1992: 37, 41; Forster 1992: 575; Howard 1988: 5-14, on China; FAO 1991: 20, on Nicaragua; and Zevallos 1989: 50, on Ecuador).

Each farmer may refuse to contribute to management costs of (say) a marketing or irrigation cooperative, for fear that others will free-ride, raising his own cost. Cooperative outcomes may also be frustrated in prisoner's dilemma situations – e.g. each farmer may overgraze the commons – if that game/situation is unlikely to be repeated in similar form, so that a tit-for-tat cooperative equilibrium (Axelrod 1984) does not emerge. In such cases, cooperative enforcement benefits all, but can be imposed only externally. That is the case for subsidies to some sorts of cooperative.


On institutional aspects of rural 'common property' and their role in poverty reduction, see Ostrom 1990.

Individual titling of common lands can affect incentives to sustainable land use. In semi-arid areas, titling may stimulate long-run investment in conservation, e.g. terracing; the title means that the traditional land authority cannot prevent inheritance, so the gains from terracing are assured for the investing family (on M bere, Kenya, see Hunt 1996). But environmental effects of titling can be negative if traditional modes of land management are superseded without group incentives or institutions to replace them. This was IFAD's experience with an otherwise successful and poverty-reducing project for consensual titling in Orissa, India.

However, common graziers seldom, with self-destructive selfishness, overgraze and destroy the pasture; it normally pays them to accept controls on cattle numbers and/or land quality, and indeed to pay authorities, including chiefs, to exercise such control in acceptable ways (Drinker 1991; Tapson 1990).

In pre-independence Zimbabwe, Ranger and Werbner (1990) show that farming in so-called 'communal' areas remained individualistic; lower productivity was due to soil, climate, and colonial denial of markets, research and infrastructure. When that denial ended after Independence, smallholder maize output surged in communal areas. Communal tenure had not been a binding constraint (Roth and Bruce 1994: 34-6; Barrows and Roth 1989: 15-18).

See Noronha (1985) on communal tenure rights; on their consistency with efficiency also Blarel et al. 1991; Place and Hazell 1993; and on investment incentives Sjaastad and Bromley 1997, and for Ghana, Besley 1995.

Lack of clear title did appear to constrain borrowing by small farmers in parts of Guatemala (Shearer et al. 1991: iv, 19) and Thailand (Feder et al. 1988), but individual, titled tenure has spread of its own accord.

Ault and Rutman 1979: 81.


Nsabagasani 1997.

Jodha 1986.


Bandyopadhyay 1995.
Shearer et al. 1991: viii.
e.g. Mani and Gandhi 1994.
In much of Latin America ‘large landowners responded to the threat of tenancy reform by evicting all hired workers or tenants who could have claimed ownership under a reform program. The landlords either switched to livestock production and ranching or – aided by significant credit subsidies – shifted to highly mechanized cultivation’ (Haddad et al. 2000; see also Deininger andBinswanger 1999; Binswanger et al. 1995; de Janvry and Sadoulet 1989). In India (Mearns 1999) tenancy reforms led to evictions, rotation among landlords’ plots to prevent acquisition of occupancy rights, and worse tenure security (Appu 1997); and attempts to ban tenancy outright (e.g. in Uttar Pradesh, Orissa and Madhya Pradesh) led to concealed tenancy arrangements which were less secure, leading to loss, or at least ‘informalization’, of access to the poor of about 30% of their operated area (Ray 1996). In Nepal, tenancy regulations proved ‘unenforceable [yet] harmful to the status of tenants [with] evictions, . . . shifting of tenants to informal settlements, and rent increases’ (Riedinger 1993: 26).
It has other advantages (frustrated by removing the options of sharecropping contracts, which deters many lessees). (1) Tenancy reduces transaction costs associated with labour: the large landowner must supervise employees if he farms commercially, but need not supervise the work of tenants so intensively (Agarwal 1993) since if they work harder they produce and earn more. The poor villager must incur search costs to find farmwork, but if he/she rents a farm it can be worked when he/she chooses. (2) Much tenancy, perceived as absentee landlordism (Thorner 1980: 159), in intensive small-scale surveys proves to be land exchange in time and space (Ghose 1983: 124-5): temporary emigrants rent out land; locals rent out remote plots, rent in nearby ones, and cut journeys among fragments. (3) Tenancy lets landowners, without draught oxen, rent out to those with oxen but not land. (4) Tenancy lets villagers farm even if poor, uncreditworthy, and unable to borrow to buy land. Note the re-emergence of tenancy following egalitarian individual land reforms in China (Bruce and Harrell 1989: 18) and Albania (Stanfield et al. 1992: 2).

Mani and Gandhi 1994.
In poor areas of Ecuador in the 1970s and 1980s, cash saved by sharecroppers, out of farm income, allowed them to climb the ladder by buying farmland later (Forster 1989: 7). Without land reform, tenancy restrictions can cut the rungs of this ‘agricultural ladder’ (Spillman 1919) and prevent escape from poverty.
In particular, sharecropping is often restricted because, without landlord-tenant deals, the sharecropper would produce less output than under fixed-rent or owner-occupancy (having to surrender part of his output to the landlord). But such deals are almost always found; theory and evidence reveal no efficiency losses due to sharecropping (Otsuka and Hayami 1988; Otsuka and Chuma 1992). Moreover, sharecropping can induce better management and supervision than alternatives; fixed-rent lease and wage employment raise the cost of management and supervision would be low. Because share-rent (unlike fixed-rent) is less when crops are poor, sharecropping reduces transient poverty – and increases incentive to grow profitable but risky crops (Faruqee and Carey 1997).

de Janvry, pers. comm.
Lieten 1996.