Rural Poverty and Markets

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Markets play a basic role in economic welfare. In rich countries life would be unimaginable without access to a wide array of reasonably well functioning markets, from food to credit and insurance. It is almost never the case that a rich-country household has to produce something in order to consume it, or that its members cannot sell their labor for a salary or wage. Credit markets function for small businesses and farms to finance investment projects, credit cards can be used to help households cover income shortfalls, and insurance markets help protect people from unexpected income and health shocks.

Access to markets is just as compelling for a poor rural household in Rwanda, India or Peru. Without good access to markets, a poor household cannot market its produce, obtain inputs, sell labor, obtain credit, learn about or adopt new technologies, insure against risks, or obtain consumption goods at low prices. Equally important, it cannot use its scarce resources like land and labor efficiently. Its decision making is constrained. Cut off from markets, it is forced into self-sufficiency, whether for food, labor, or other items. Its own subjective valuations, rather than market prices, then determine how its resources are used.

Consider, for example, a poor farmer who can produce high-quality berries at a low price. In town, exporters are willing to pay 20 cents a basket for berries like the ones he can grow; however, poor roads and information about buyers make marketing this perishable crop too expensive and risky. So the farmer produces a few baskets for his family's own consumption, and he spends the rest of his time doing low-wage work, when available, on a nearby ranch. A basket of berries costs him 10 cents to produce. Implicitly, then, this is his decision price, or the price at which he is willing to produce berries. If he could become part of the export supply chain, his decision price would increase to the market price. He could be more efficient, shifting some of all of his time from low wage work to berry production, and he would have an incentive to invest in his farm. Most importantly, he could generate badly needed cash for his family.

When a household's production and consumption decisions are based on subjective valuations instead of market prices, the household can reap gains, perhaps significant ones, by acquiring better access to markets. For example, without access to a labor market, a poor family's time may be "trapped" in low-return activities on the farm instead of being sold for a wage in higher-return activities on another farm or at a business in a nearby town. When high transportation costs or marketing risk keep a farmer from selling a cash crop, her fallback is to produce a lower-value crop that can be eaten at home. When a farmer cannot obtain fertilizer or hire labor at the times needed, or when he lacks the cash to pay for these inputs, less land is sown, output falls and more productive technologies may not be adopted. Efficiency is critical, because even a small income gain can make a significant difference for an impoverished household.

Lack of market access can have catastrophic effects on rural households when disasters strike. Serious crop failures (more than 25% below-average harvests) occur in Southern Africa in about once every five years. When these happen, local food prices

rise disproportionately (that is, above the import parity price), with seriously negative effects on rural households. On the other hand, when local markets are closely integrated with global markets, a poor harvest will have little if any effect on local food prices. Without the ability to sell, irregular bumper harvests depress grain prices, undermining the incomes of small farmers who manage to produce a surplus. The result is cycles of low-price glut followed by scarcity (Poulton, et al., 2005).

Markets are important for pro-poor development and poverty alleviation, for many reasons.[1] The livelihoods of most of the world's poor people depend directly on their involvement in markets, either as producers or workers. Historically, the major successes in poverty reduction have been associated with the growth of markets and the private economy. When asked about the major challenges confronting them, poor people frequently cite markets—either their lack of access to markets or the effects of markets on their livelihoods. Markets can play a valuable role in promoting and facilitating economic efficiency, by facilitating exchange and the coordination of many different kinds of resources, goods and services. They can help protect poor people from local food-production shocks. In these ways, markets are vital for income growth and survival.

Nevertheless, markets frequently fail to serve the interests of the poor. Understanding why is critical for designing rural poverty-eradication policies.

The market challenges confronting the poor are probably greater now than ever before, because the context is changing rapidly. Governments are withdrawing from their traditional involvement in agricultural markets, increasingly obligated to do so by the international trade agreements into which they voluntarily enter. Globalization exposes agricultural producers to international price gyrations but brings potential benefits as well as threats.

At the same time, in most countries agricultural markets are being transformed by the new demands of exporters and supermarkets. There is wide evidence that poor rural producers have found themselves systematically precluded from these high-value market chains, left to fend for themselves in traditional markets in which prices, as well as quality and other demands, are lower.

The changing market reality offers opportunities for those poised to take advantage of them as agricultural producers or, increasingly, as nonagricultural producers and wage earners. *The overarching challenge for small farmers is to find ways to engage in agricultural markets on more favorable terms*, specifically:

- **Moving into *new* high-value agricultural market chains.** This includes both access to new markets and capacity to enter them.

- **For the majority of farmers, who are not part of high-value chains, making use of *existing* agricultural markets.** This includes both access to agricultural input and output markets and the capacity to use them.

[1] For an excellent discussion see Dorward, et al., 2003.

- **For all farmers, adjusting and taking advantage of the rapidly changing agricultural market environment.** This includes both opportunities and threats created by globalization, liberalization, and the transformation of agricultural market chains.

These challenges and the ways are needed to address them take different forms for different poor rural households, because the rural poor are heterogeneous, they frequently receive income from multiple agricultural and nonagricultural sources, and they depend on different markets for their livelihoods.

I

Setting the Stage: Rural Poverty and the Role of Markets

The role of markets is complex, for many reasons. There are many different kinds of markets, and a particular market may be important to some poor households but not to others. Often rural households are both producers and consumers of crops. Market competition brings greater efficiency and lower prices for consumers, who include the poor; however, it also is a threat for some producers. Poor rural households are diverse; thus, different markets matter for different poor people. In general, access to not one but multiple markets is needed in order for poor households to find a pathway out of poverty, and many of the ways in which markets affect rural poverty are indirect. Putting markets to work for the rural poor requires having not only access to markets but also the complementary assets required to make effective use of these markets.

Which Markets Matter to Poor Households?

Figure 4.1 illustrates the roles of diverse markets in shaping the livelihoods of rural households. The vertical panels in the figure depict the two stages leading to income and livelihood outcomes in an economic model of an agricultural household: I) Production, activity choice, and income; and II) the transformation of income into livelihood outcomes via consumption. They reflect the dual nature of agricultural households, as both producers and consumers. The progression from one stage to the next is not linear; the double arrows spanning the panels indicate that there are important feedbacks. For example, in the imperfect-market environments characterizing most poor rural areas, incomes and consumption shape production (as when a poor household cannot afford crop inputs or must sacrifice leisure instead of hiring labor), and so may livelihood outcomes (as when hunger impedes one's ability to work).

In Stage I, rural households engage in multiple activities (colored blue in the Figure), as discussed in the Background Paper for Chapter 1. They include subsistence production, commercial agricultural and livestock production, nonagricultural production, migration, and wage labor. The household's production decisions generate outcomes (green), which include "portfolios" of production and incomes. Even in a single

household, the production portfolio often contains a diversity of agricultural and nonagricultural products.

With the exception of subsistence production, the household's activities create flows of goods and incomes (depicted by the solid arrows). Output markets turn commercial production into income. The resulting household income portfolios, like the activities that produce them, often are diverse. In Stage II, household income portfolios and subsistence production produce demand and livelihood outcomes, including consumption of home-produced and/or purchased food.

Multiple markets (colored blue) affect the household at each stage of this livelihood creation process. The influences of markets are depicted by broken arrows in the Figure. In Stage I, access to markets for inputs, technology, and extension shapes subsistence and commercial production. So does access to factor markets, including land, labor, and capital. If these markets are not accessible, or if they are accessible only on terms that are unfavorable to the household, both the mix of activities and the efficiency with which activities are carried out will be affected. For example, without access to vital agricultural inputs, the family may forego high-paying commercial production and instead use its labor for low-value subsistence production, low-paying wage work, or migration.

The ability to sell on equitable terms in output markets is crucial in transforming production into cash. For many poor rural families, so is the ability to obtain secure and high-paying jobs in agricultural and nonagricultural labor markets, as well as to convert migrant earnings into remittances at low cost. In Stage II, the ability to transform cash into consumption depends on having secure and efficient access to consumption markets.

Access to financial markets is vital at all stages of the household's livelihood chain. The lack of credit and income security deprives households of access to productive inputs and discourages them from producing high-value but risky crops; high transfer costs can deprive households of 20% or more of the monies their migrants remit; and when the household lacks access to financial services, sharp swings in cash income can translate into equally sharp swings in consumption, from which it may be difficult to recover. The role of financial markets is discussed in the Background Paper for Chapter 3 of this Report.

The broken lines in the figure represent the final links in the market chains connecting rural households to the sellers of the inputs and consumption goods they demand and the buyers of the goods and services they supply. When accessible, the output market gives the farmer a farmgate price, which if high enough will give the farmer an incentive to produce for the market; otherwise not. Conditions all along the market chain end up shaping this farmgate price. For example, if a farmer is part of a high value market chain, with a contract to supply a luxury hotel with quality fruit on a regular basis, this will be reflected in a high farmgate price. If instead she sells her harvest in the local spot market or to a trader when other farmers are trying to sell identical produce, her farmgate price almost certainly will be low, even if the trader is able to secure a much higher price in the urban or export market where he sells. Poor

farmers' information about the prices paid for their produce further along the market chain is likely to be scarce or nonexistent. This limits their ability to bargain for a better price. A trader who owns the only truck in a village can exert monopolistic control over the market, buying low from farmers and selling high in town. Powerful supermarket chains and their agents increasingly are becoming powerful players in the market chain, dictating terms and influencing prices for intermediaries and farmers.

Formal and Informal Markets

The spectrum of market relations is bracketed by two extremes. At one are the many poor subsistence producer households do not sell any of their production and supply many of their own inputs. At the other extreme are large commercial households that sell all or most of what they produce and purchase most of their inputs. In between are many households, often poor, selling small amounts of their crops as the need for cash arises and supplying some of their own inputs while purchasing others. Often they are involved in informal markets, for example, transacting a few kilos of grain to a neighbor or the local store, striking labor exchanges to harvest their crops, sharecropping, or engaging in informal loans—frequently with interlocking markets, e.g., a loan from a landlord in connection with sharecropping and a promise to supply labor on the landlord's estate at harvest time. Informal market relations also can characterize small commercial farmers, as when a trader advances cash to purchase inputs ahead of the harvest and then subtracts it (along with interest) from his purchase price. For many of the world's rural poor, having access to these informal markets is critical to survival, particularly when access and the capacity to use formal markets are limited.

Diversity among Poor Rural Households

Poor rural households exist in a diversity of market settings. The Background Paper for Chapter 1 illustrates the diversity of activities in which poor rural households participate and from which they get income. Most striking perhaps is poor households' reliance on wage labor markets. In some cases, most of a poor household's wage income comes from agricultural work; examples include the largely agriculture-based economies of Africa (World Bank, 2008). In others, nonagricultural wages are more important than agricultural wages. In China and most Latin American countries, non-agricultural wages play a far greater role in rural household incomes than do agricultural wages.

Nevertheless, crop production is an important income activity for rural households, particularly in agriculture-based economies. In Ghana, Madagascar, Malawi and Nigeria, even the poorest households participate in output markets, selling part of their crops. The poor African households in the RIGA data set marketed an average of between 26% and 59% of their output.

As we saw in the Background Paper for Chapter 1, rural households are diversified across income activities. Many have diversified agricultural activities, as

well. This finding by Ellis, et al. (2003) is typical: "Poor rural Malawians confront multiple severe constraints that can only be addressed by some combination of raising agricultural productivity, diversifying farm output to reduce risk and shift toward higher value outputs, and diversifying livelihoods toward nonfarm enterprises." Access to agricultural input and output markets is vital for poor rural households that receive a significant part of their income from agricultural activities, as owner-operators, renters/sharecroppers or agricultural laborers.

Data from living standards measurement surveys (LSMS) reveal sharp disparities in market access between poor and non-poor rural households. This is illustrated in Figure 4.2 for the 15 countries of the RIGA data set. The figure was constructed from an infrastructure access index that included both public goods (electricity, telephone, etc.) and distance to schools, health centers and towns, using principle components analysis. Infrastructure access was measured differently in the 15 surveys; thus, the indices are not directly comparable across countries. Nevertheless, in all 15 countries the difference in infrastructure access between poor and non-poor households is striking. The index is always positive for non-poor rural households and negative for the poor.

Differences in market involvement between poor and non-poor rural households are also evident in specific input and output markets. Poor households' participation in input markets tends to be more limited than that of non-poor households. In Nicaragua, 19% of poor households involved in agriculture purchased fertilizers, compared with 32% of non-poor households. In Panama the shares were 11% and 38%, respectively; in Bulgaria, 17% ad 54%; and in Pakistan, 55% and 70%. In Malawi, Ghana and Madagascar, half or fewer of rural households in the lowest land quintile purchased fertilizer, and 12.9% or fewer purchased pesticides. Many more used hired labor: 64% in Ghana, 33% in Madagascar, and 29% in Malawi. In China, very few agricultural households hire labor. These differences in participation in markets between the poor and non-poor become magnified when one looks at the amounts of inputs purchased, which tend to be much larger for the non-poor.

Country-wide indices on rural access to markets certainly mask large regional differences. The households that have access to markets tend to be concentrated in a few regions within countries. In the other regions, access indices would show far lower levels of market participation.

Diversity within Rural Households

Not only do different markets matter for different households; the role played by markets is not the same for all activities or for all members within households.

In most countries, a few large commercial producers coexist with many small commercial, subsistence and infra-subsistence farmers. Large farms can be thought of as pure production enterprises, but small-farm households have a dual character: they are both producers and consumers of food. That rural households engage in both production

and consumption activities has been recognized for a long time. When food prices go up, these households "win" as producers but "lose" as consumers. If a poor farmer does not produce enough food for his family's subsistence and must turn to the market to fill the gap, he loses when food prices go up.

In remote areas where physical access to markets is costly, households diversify their production partly to satisfy their own consumption demands (Omamo, 1998). High costs of buying and selling in food markets force many households into subsistence production: selling becomes unprofitable, and it is cheaper to produce one's own food than to buy it in the marketplace. It is rational for smallholders not to adopt innovations that raise productivity if they raise transaction costs by more. Because they produce only for home consumption, subsistence producers are not directly affected by changes in the market price of food. However, poor subsistence farmers often purchase inputs, and thus they are adversely affected when the prices of these inputs rise.

Subsistence farmers also may be affected indirectly by changes in the market price of food, through their market relationships with commercial food producers. For example, a decrease in the market price of grain induces profit-driven commercial farmers to scale back their production. If a subsistence household sells some of its labor to the commercial farm to get cash, its income will fall. The subsistence farm does not sell grain, but it loses when the grain price falls, because of its links to the commercial farm via the labor market. Paradoxically, its subsistence production of grain may increase as a result of the decrease in market price. Unable to work for a wage, it may spend more time producing the subsistence crop at home. Grain production on the subsistence farm increases, but welfare goes down. In this "immiserized growth" scenario, poor households retreat more deeply into subsistence production (Dyer, et al., 2006).

In many poor rural areas, smallholders are net buyers of staples. As consumers, they benefit if access to new markets lowers their consumption costs (Jayne). A given amount of cash will go a longer way towards alleviating poverty if the prices that poor households pay for their consumption goods are low. High transaction costs and market power are notorious for raising consumption prices in rural areas, particularly for the poor.

Heterogeneous interests and power asymmetries within poor households may lead to conflicting interests with regard to market changes. Here, gender plays a particularly important role. In Africa, there is convincing evidence that, within the same household, plots of land farmed by women do not receive the same amount of inputs as those farmed by men (Udry, 1996). The household's income could be increased by reallocating some inputs from male to female plots, but gender dynamics within the household prevent this from happening. One implication is that an increase in market prices of "female" crops will not have the same effect on household income and welfare as an increase in the prices of "male" crops. On the consumption side, there is evidence that income controlled by females is spent differently than income controlled by men. Better access to markets for consumption goods favored by women (including food, according to most

studies) thus will have a different and perhaps more beneficial effect on household welfare than access to markets for goods favored by men.

In short, poor rural households are diverse in many ways that shape the effects that markets have on their welfare. Different markets represent obstacles for different households. Moreover, the markets, themselves, are changing.

The Changing Agricultural Policy and Market Environment

Prior to the 1990s, governments often were heavily involved in agricultural input and output markets, subsidizing inputs and controlling output prices. Input price subsidies benefited farmers with access to the subsidized inputs. Cheap food policies in many countries kept local food prices artificially low relative to world prices, hurting farmers who were net sellers and depressing agricultural production and incomes while benefiting consumers, both rural and urban. This was the case in many African and Asian countries.

In other countries, including Mexico and the Central American nations, protective import policies kept local food prices artificially high, benefiting net sellers but hurting consumers. These policies favored some producers and consumers. However, they depressed overall agricultural incomes, by encouraging farmers to invest in the protected crops and not in other crops that might be produced more efficiently. Overvalued exchange rates discouraged agricultural exports. Many governments tried subsidized credit and insurance programs, usually with poor results. They usually fell victim to the same conditions that caused the lack of private credit and insurance for poor farmers to begin with and carried a high cost for both the rural and national economies. As Jayne (2008) notes, "the cost of supporting smallholder production – through input subsidies, credit programmes with low repayment rates, commodity pricing policies that subsidized transport costs for smallholders in remote areas and the export of surpluses at a loss – contributed to fiscal crises and in some cases, macroeconomic instability."

The past decade has witnessed a transformation of the economic and political landscape in which poor rural households find themselves. The state has redefined its role in the rural economy, from that of actively managing agricultural input and output markets to a more laissez-faire stance. Globalization and integration, marked by the WTO and regional trade agreements, have simultaneously increased agricultural producers' access to foreign markets while exposing them to greater competition from abroad. The degree to which world prices are transmitted to local prices varies from place to place, but there is no doubt that the trend is for farmers to be increasingly exposed to swings in global prices for the crops they produce and the food they consume.

Poor farmers are particularly vulnerable to market price swings. They face a dilemma. Without access to markets, their income possibilities are restricted and they are exposed to catastrophic consumption price spikes when crops fail. With market integration, they are exposed to constant gyrations in world prices, instead.

Fluctuations in agricultural prices on world markets have been particularly striking in recent years. So have the inter-connections between food and energy markets, as a growing amount of the world's agricultural production goes to biofuels. Figure 4.3 illustrates the recent trends in the world prices of the major food crops. Each of these price trends is volatile, and all move sharply higher after 2000. An increasing amount of corn production is being demanded for biofuels (Figure 4.4). Not surprisingly, as oil prices increase, so do corn prices (Figure 4.5). The effects of higher prices for crops used in energy production spill over into higher prices for other food crops, which compete with biofuel crops for land and other resources.

How these rising international food prices affect prices within countries depends on exchange rates and policies. Exchange rates convert international prices (in US dollars) into local currency. Recently, the US dollar has weakened against most nations' currencies. This has blunted a large proportion of international cereal price increases. If the world price of rice increases 10%, but a country's currency strengthens against the dollar by 10%, the domestic price is unaffected by the higher world price. In the Philippines, the world price of rice in pesos rose 10% between the fourth quarter of 2003 and 2007, even though the world price in dollars rose 56%. In the future, if domestic currencies fall relative to the dollar, the effect of higher world prices on domestic prices will become magnified instead.

Countries' macroeconomic performance thus can affect local food prices via the exchange rate. Governments can also use price stabilization policies to reduce the impact of rising world prices (see Part III). The combined effects of the exchange rate and stabilization policies resulted in domestic prices of rice being substantially below world prices in the Asian countries depicted in Figure 4.6. Domestic prices of rice rose only 3% in Philippines and Viet Nam and 5% in India. The world dollar price of maize rose 40% between the fourth quarter of 2003 and 2007, but in Philippine pesos it fell by 1%, and the domestic price of maize in the Philippines rose by only 5%.

The competition between biofuels and food no doubt will intensify in the future, and there are indications that the observed long term decline in *real* prices could come to a halt, signaling a structural change in world agricultural commodity markets.

What does this mean for the rural poor?

This question really has two parts. The first is whether the recent increases in world food prices make their way to the places where the rural poor live. Once exchange rates and government price stabilization policies translate world prices into domestic prices, the effect on the farmgate prices received by farmers and on the consumer prices paid by households depends on how efficiently markets transmit price changes across space *within* countries. The second part of the question is whether increases in local food prices are good or bad for poor rural households. The answer to both of these questions is "It depends."

A few studies have tried to test for market integration, that is, whether local food prices vary in tandem with world prices. They find that that the extent to which changes

in world prices are transmitted within countries varies from place to place, reflecting differences in country policies as well as the efficiency of domestic markets. The transaction costs of using markets may be different from one village to another and also among farmers in the same village, for example, where one farmer has a truck and others do not. Because of this and other structural features of markets (including monopolies), healthy systems of market exchange do not appear overnight after market reforms. "Markets require supporting infrastructure, institutions and policies, and are mediated through existing social and economic relationships (Park, et al., 2002)." In some instances this means that benefits and costs of market reforms do not reach small farmers as quickly as they might if markets operated more efficiently. Generally, the benefits and costs of market reforms will reach some farmers more quickly than others.

Mexico is a case in point. The 2003 Mexico National Rural Household Survey found that the average price of a kilogram of maize in village stores was 2.57 pesos. However, it ranged from 0.8 to 11 pesos. For every 10 kilometers of distance from the village to the local (county) commercial center, the maize price increased by an average of around 4 cents. The distances to the commercial center ranged from 1.5 to 300 kilometers. The survey also found striking differences in wages: the daily wage of an agricultural worker ranged from 40 to 140 pesos.

Some countries have tried to minimize regional price differences through pan-territorial pricing. These are policies that give farmers a higher price for their crop in low-price areas—or, more commonly, try to impose a lower price in high-price areas (in an effort to keep food prices low for consumers). The effect on the rural poor depends on whether the poor are net producers or net consumers of the crop. Inevitably, pan-territorial pricing creates distortions that discriminate against some crops and results in potentially costly losses in agricultural efficiency, a drag on agricultural growth.

The dual character of poor rural households as producers and consumers creates an inherent conflict of interests within the household. What is good for production (e.g., a higher food price) may be bad for consumption (higher food costs). Some recent studies of the effects of changing food-import prices on rural households suggest that the consumption effects dominate the welfare outcome for most small-farm households in Central America (Taylor, et al., 2007). Meanwhile, research from Mexico suggests that the supply of cereal crops is not as elastic as often thought (Dyer, 2007), and for the nation's many small, subsistence farmers, it may be perverse, increasing when the market price falls (Dyer, et al., 2006).

Supply Chains and the Supermarket Revolution

At the same time that farmers have become increasingly integrated with regional and world markets, there has been a rapid and profound transformation of agricultural supply chains in many countries, driven by exporters and supermarkets. As the demand for vegetables, fruit, nuts and other high valued products has risen, urban retailers are handling increasingly more of these high value commodities. The demands of international consumers as well as large-scale retailers are reshaping the supply chain. Studies find that, in much of South America and East Asia, the average share of

supermarkets in food retail went from roughly only 10-20% circa 1990 to 50-60% by the early 2000s (Reardon and Berdegué 2002, Reardon et al. 2003). These countries saw supermarket diffusion in a single decade that took some five decades in the U.S. and the U.K.

Can a small producer whose vegetables fetch a low price in a local produce market become a supplier of Wal-Mart or Carrefour? Or will she be driven out by larger, more efficient suppliers? As more and more consumers buy their vegetables at supermarkets, can small farmers afford to remain in traditional market chains? Or will the defection of middle and large producers to new, high-value chains open up new spaces for poor producers to compete in traditional markets?

In the new agricultural market environment, the private sector and civil society are becoming increasingly integrated. Rural households, governments, development institutions, and NGOs are all scrambling to find their way in this new order. As a recent report put it,

> *"This has created many new opportunities, but also new questions regarding the roles, functions and core capacities of the various key players. Deep-rooted principles and paradigms have been cut down in a short period. It is sometimes like mixing an Italian basketball team with Nigerian soccer players, and trying to play in a volleyball tournament. The new situation raises many questions about how the game is played, and who are the winners and losers* (KITT, et al., 2006, xii)*."*

It is important to realize that the impact of supermarkets on agriculture varies enormously from country to country. Evidence suggests that supermarkets have had a negligible influence thus far in Africa (Jayne, 2008). Tschirley et al (2004a) and Tschirley et al (2004b) found that in Africa supermarket chains held less than 2 per cent of the national urban fresh produce market in late 2003. Traill (2006) estimates that Kenyan supermarkets will hold at most a 16 per cent share of total food sales by 2013. One study found that, even in the relatively modernized capital of Kenya, Nairobi, small kiosks, informal shops, and small independent stores accounted for 71 per cent of consumers' expenditures on food staples; local open markets and small millers account for another 13 per cent, and the big supermarket chains accounted for only 17 per cent (Muyanga et al, 2005). Throughout the country, across all retail consumer food expenditures, the share of supermarkets is estimated to be roughly 3 per cent. Reardon and Timmer (2006) note that there is uncertainty about how quickly the supermarket sector will grow even in Kenya, and in most of the rest of Sub-Saharan Africa it is "unlikely that…we will see supermarket growth for several decades." This means that, with the exception of the small minority of farmers who are able to enter high-value export and supermarket chains, traditional market chains will continue to be more important for small African farmers than modern ones. The challenge, then, is how to enable poor African farmers to capture more benefits within traditional market chains.

II

Challenges for Poor Farmers in the New Market Reality

Poor farmers are typically the weakest link in market chains on both the production and consumption side. They are the least able to take advantage of new market opportunities and the most vulnerable to the rapidly changing market environment around them. No matter how successful they are at improving their production practices and raising productivity on the farm, the terms with which they engage in markets represent a constraint, often a decisive one.

Broadly speaking, there are two ways in which agricultural markets can be used to help poor households meet the objectives of higher income and greater income stability. First, poor farmers can move from low to high value market chains. Many of the most captivating development success stories in recent years involve small farmers significantly increasing the value of what they produce by moving into new market chains. Second, they can increase their share of benefits in existing chains. These two challenges become one and the same for the world's many small farmers who are unable to access any markets.

Poor farmers face significant obstacles both to entering high-value chains and to strengthening their position within existing ones, however.

Challenges to Entering High-Value Chains and Capturing More Value in Existing Ones

In general, small farmers have to create value in order to capture benefits in markets. No downstream market actor would be willing to pay more for the same thing that they now get at a low price. The key challenge, then, is enabling poor farmers to create and capture more value, whether in existing or new market chains. As agriculture becomes increasingly integrated with agribusiness and retailing and procurement systems are increasingly connected to supermarkets, new opportunities arise, but the challenges become more daunting. Competition in modern agricultural supply chains is intense, so strategy, innovation and efficiency are critical. Only chain participants who are able to compete and add value can survive in modern supply chains.

Poor farmers are at a disadvantage in this new agricultural market environment. Modern procurement systems favor large farmers in most countries. Naturally, buyers for supermarkets and agro-industries prefer to buy a reliable supply of high-quality produce from a small number of large farmers instead of many small ones, if they can. Nevertheless, market empowerment is not only determined by farm size. Many small farmers can participate gainfully in modern supply chains if (a) if they can ensure buyers of a reliable quantity and quality of output, and (b) if the production of many small farms can be efficiently aggregated into the larger lots demanded by buyers. In order to succeed, small farmers need to have access to physical, human, and social assets: to education, irrigation, transport, roads, and such other physical assets as wells, cold

chains, greenhouses, good quality irrigation water (free of contaminants), vehicles, and packing sheds (World Bank, 2008, p. 127).

Belonging to an effective producer organization can be a vital asset enabling small farmers to enter high-value supply chains. Group action is valuable when it is able to reduce transaction costs, either on the input or output side. On the input side, it can improve farmers' access to seeds, fertilizers, and other inputs as well as credit and information at lower cost. A study in Kenya found that lack of credit was the single major constraint limiting the success of producer marketing groups (Shiferaw, et al, 2006). On the output side, it can make it possible to combine many farmers' production into larger lots. Both increase value in the supply chain. A farmers' organization also can increase farmers' bargaining power with buyers.

Nevertheless, a producers association is not likely to succeed if its members do not have access to the other assets just listed. Most farmers in developing countries who lack these assets find themselves excluded from high-value market chains. To a great extent, poverty is about not having access to assets (see Background Paper for Chapter 1). This, in a nutshell, is the greatest challenge to bringing poor agricultural producers into high-value supply chains.

In fact, there is strong evidence that farmers' access to land, water and other key resources is critical to group success (Barham, 2006). As a result, poor farmers tend to be left out of initiatives to organize small farmers and improve their market access. As Shepherd (2007) notes:

> *"Collective access to markets for the poorest farmers who lack education, numeric skills, etc., is improbable and thus some form of targeting is required to ensure that farmers have the minimum qualities for successful intervention. Linking organizations...want to work with poor farmers who have the potential to supply markets. But poor farmers usually lack crops with market potential and have poor market access because of road conditions and other constraints."*

In China, it appears that the poor are able to participate in the new opportunities arising from the growing demand for high value horticulture commodities. Smallholders' access to very good markets is a key to China's success in this regard. Another key may be that modern wholesalers and retailers have not penetrated into rural communities—the supply of horticultural products in China largely flows through traditional small-trader dominated supply chains (Wang, et al., in press). Because of the nature of land institutions in China, buyers, whether in modern or traditional market chains, generally do not have the option of purchasing from large farmers like in most other countries.

China may be an exception, though. There are many examples of projects that have successfully brought small farmers into high-value market chains. (Some of these are described in Part III). However, the poorest farmers are not likely to be the beneficiaries of these projects. When bringing the poorest farmers into new supply

chains entails overcoming severe marketing and asset obstacles, it is worth considering whether other, more accessible pathways out of poverty should be pursued, instead.

Frequently, success stories involving small farmers in high-value chains focus on export markets. However, overall, developing countries export less than 10% of their fruit and 5% of their vegetable production. This naturally makes domestic markets a more reasonable target for market-chain development. Domestic markets offer other advantages. In export markets, increasingly farmers have to meet not only quality standards but also safety requirements, and in the future they will have to comply with a range of other social, environmental and ethical criteria. Export producers are confronted by an on-going need to stay up-to-date with new standards or else risk losing their position in the market.

Chile following its fruit-export boom is an excellent illustration of how this affects the competitiveness of small farmers. Approximately 43% of Chile's agricultural land (9.9 millions of hectares) was expropriated between 1965 and 1973; nearly all large farms were partly or wholly redistributed as parcels averaging 9 Basic Irrigated Hectares (BIH).[2] Today, the average size of fruit-export farms is approaching 50 hectares. A small farmer wishing to partake in export markets faces stiff challenges in this new market environment, and a poor small farmer even more so.

Not surprisingly, market linkage projects currently reach only a small minority of farmers. NGOs and governments almost never include a rigorous diagnostic component in their projects to test whether poverty would be higher without the projects, but because of the considerations described above, few poor farmers have benefited directly from market linkage projects.

A study of potato and coffee producers in Peru found evidence that technical service providers screen farmers for primary schooling before offering them assistance with access to "dynamic markets." The key characteristics determining market access were found to include human capital (primary education, household size, gender of household head), agricultural and livestock asset holdings, social capital (number of organizations to which the farmer belongs), and risk aversion and access to credit. The latter is particularly important given that transportation costs are higher for farmers supplying dynamic markets than for those in traditional markets, due to greater distance to dynamic markets as well as quality requirements that raise transportation costs. Nevertheless, the study found that the lack of access to dynamic markets can be overcome for a large segment of small farmers, by designing interventions focusing on their disadvantages relative to farmers who supply those markets. "Although it obviously is not the only solution for overcoming the problems of rural poverty, improving the opportunities for the small producer to gain access to new and better market opportunities is a critical objective of any rural development strategy (Escobal, 2005, p. 3)."

[2] A BIH was the amount of land estimated to have the equivalent productive potential of 1 ha of prime irrigated land in the Maipo River valley, one of Chile's best agricultural regions.

If poor farmers are not able to enter high-value supply chains, they may still be able to benefit in other ways, particularly by supplying labor to commercial farms, via the demand linkages that are created within rural economies when agricultural incomes increase, or by entering or expanding their sales in traditional markets. As the nonfarm economy expands, both in rural and urban areas, improved access to non-farm labor markets increasingly becomes an option for many poor rural households. Nonfarm wages constitute the single largest source of income for rural households in a growing number of developing countries.

Challenges to Capturing Benefits in Existing Chains

Because most agricultural production goes into domestic markets and given the stringent quality and other demands farmers face in export markets, capturing benefits in existing supply chains offers greater promise to more agricultural households than trying to enter new, high-value chains. Nevertheless, numerous studies by governments, development agencies and researchers reaffirm that serious market-access challenges confront poor rural households in traditional as well as modern markets.

One study estimates the fixed transactions costs facing Kenyan semi-subsistence maize farmers in 30 villages to be 15.5% of market price and argues that these are a major barrier to market participation. A study in Peru found that transaction costs represented 50% of the value of sales. They were considerably higher for small producers (67%) than large producers (32%). The components of these transaction costs included distance and time to market, the producers' experience in the market, the stability of their relationships with buyers, and their investment of resources in supervising the implicit contracts related to their market transactions (Escobal d'Angelo, 2000).

A study in Tanzania found that when a price shock hits one market, its effects are transmitted imperfectly to other markets, the result of poor market integration and high transaction costs. The time required for price differences to adjust *half way* ranged from just under 4 weeks (between Mbeya and Iringa) to more than 22 weeks (between Dar es Salaam and Iringa). Adjustment "half lives" and transaction costs both increased with distance between markets (Van Campenhout, 2007).

There are little-studied connections between formal and informal markets—and even with subsistence producers. In Mexico, only 26.5% of farmers who grew either maize or beans sold their crops. Two thirds of poor agricultural households in Mexico grow maize, but most are subsistence producers: Only 17% sell any of their production. It appears that even subsistence producers are influenced by the market prices for these crops. Although subsistence producers do not participate (or participate only minimally) in maize markets, it takes only one commercial producer to transmit the effects of changes in the market price of maize to subsistence producers in a village. Price shocks in markets for staple goods are transmitted to subsistence producers through interactions in factor markets. In a poor region of Mexico, a decrease in the market price of maize

was found to reduce commercial production sharply (unless accompanied by other policies to encourage maize production, like input price supports). Yet subsistence production of maize went up, stimulated by lower wages and land rents. The result was a situation of immiserized growth: subsistence producers' output increased, but their incomes fell. A 10% drop in the market price of maize was found to increase poverty among subsistence farmers by as much as 1.7% (Dyer, et al., 2006).

Responding to, and Benefiting from, Rapidly Changing Market Environments

The alternative to moving forward, through empowerment in existing chains or entry into new ones, is not to stand still. The market environment in which rural households find themselves is changing rapidly, and this raises new challenges. A livelihood today, secured in part by protective import tariffs that keep food prices high, can quickly become untenable if those policies are dismantled and food prices fall to world prices. On the other hand, a policy that opens up foreign markets for agricultural exports, or the arrival of the supermarket revolution, can create new income opportunities. How can a rural household avoid falling into poverty in the first case and escape from poverty and prosper in the second?

Responding to rapidly changing market environments becomes a challenge when households face constraints in gaining access to new, ascending markets and in moving out of old, descending ones. The challenges are greater still for poor households that were not successful participants in traditional markets to begin with. Economic research that tries to model the likely impacts of trade and market reforms on rural households assumes that households will shift their production and labor out of the activities that are disfavored by the reforms and into the activities that become relatively more profitable.[3]

In real life, significant obstacles restrict poor households' ability to adjust in this way. One set of obstacles has to do with poor households' lack of the assets, including land, capital, and skills, that are needed to enter new production and employment activities. Another has to do with a lack of access to markets because of high transaction costs, typically in both input and output markets.

When the obstacles prevent poor households from responding to market shocks, the fallback or default course of action is to continue on in what has become a more precarious activity, possibly falling into poverty or, if already poor, into poverty more deeply.

Access to markets brings both income opportunities and threats to poor producers and workers. Access to markets for agricultural goods can create direct benefits for poor self-employed producers of these goods, but only if they do not face serious barriers to entry associated with the nature of the crop, quality and quantity requirements, output marketing systems, input markets, and access to land and other assets. There is

[3] This includes computable general equilibrium models. Very few such models consider high transaction costs or other barriers limiting producers' adjustment to market shocks.

considerable potential for poor households to benefit less directly, by supplying wage labor to less-poor farmers producing agricultural goods for new markets. One of the most striking examples is Chile's fruit boom, in which the rural labor market played a vital role in transmitting benefits of export production to poor rural households. There is potential for poor households to benefit even less directly, by supplying goods and services demanded by less-poor farm households (see below).

Recent studies explore the effects of market and trade integration. In China, where both poor and non-poor farmers work small land holdings, agricultural labor markets are thin. Because of this, there is little potential for poor rural households to benefit from Chile-style employment linkages. A similar problem arises in Mexico, where agricultural labor markets exist but where farm employment is falling even as the value of crop production increases—a rise in productivity perhaps related to new investments stimulated by the North American Free Trade Agreement (NAFTA). In these cases, if the agricultural incomes of poor households are going to increase as a result of trade integration, it will have to be via the sale of own agricultural production. Full-time farmers are among the absolute poorest in China and live in relatively poor parts of the nation (Rozelle, 1996; World Bank, 2005).

For China, WTO will lead to more imports and lower prices of edible oils, sugar, maize and cotton. Farmers producing those crops will have to become more productive just to stay even. However, there are other commodities in which China has considerable comparative advantage—for example, rice, meat, aquaculture, and horticultural products. Cheaper imports of inputs (for example, feed grains, like maize and soybeans) will help those who produce or can shift into these competitive goods become even more competitive.

A study of the effects of the WTO in China concluded that, for the average farm household, the net impact will be positive. However, not all households and not all commodities will be treated equally. Huang, Rozelle and Chang (2004) find that good markets in the face of trade liberalization have a mixed effect. If the poor happen to be producing an "internationally competitive commodity" and there are good domestic markets, they benefit from trade reform. The opposite is true if the poor are producing "internationally uncompetitive commodities." Poorer households, especially those in the provinces in the western parts of China, will be hurt. The main reason is that the farmers in Western China are currently producing commodities that are receiving positive rates of protection, and their production prices will fall.

How, then, does one minimize the negative effect on these households? The key is either to provide direct assistance in the form of income transfers that few countries can afford, or more constructively, to eliminate the constraints that prevent poor households from becoming more efficient by shifting their production towards the commodities that will benefit from trade liberalization and by increasing their productivity (through more R&D, extension, investment, and access to inputs, including credit).

Instead of urging a halt to liberalization, donors and development practitioners need to find ways to target those who are being hurt the most with assistance programs, while eliminating the constraints that keep poor households from shifting into more competitive activities. The studies from China highlight the importance of thinking regionally. When poor rural households are regionally concentrated, targeting them with development projects can be easier than when the poor have to be identified and targeted within more heterogeneous populations. Nevertheless, poor regions tend to be poor because they face challenging geographic, economic or other constraints that may be difficult to address.

Overcoming Obstacles Preventing Poor Households from Accessing and Using Markets

Addressing these major challenges requires overcoming a number of obstacles, which loom particularly large for the rural poor. Overcoming these obstacles represents "sub-challenges" that need to be the focus of policies and development projects. The obstacles include:

(1) A lack of power in agricultural input and output markets

(2) Poor access to complementary assets

(3) Poor access to complementary markets

(4) Weak market linkages

(5) Food security and inability to diversify income sources

(6) Market isolation

(7) Poor access to market information

(8) Poverty traps

(9) High Consumption Prices

We consider each of these sub-challenges in turn.

(1) Empowering Small Farmers within Markets

Strengthening the market position of small farmers often is the most important single thing that governments and development projects can do to make agriculture a pathway out of rural poverty. Reforms can be made along the market chain to make it more competitive and efficient, but this will not automatically create benefits for the poor. For example, a truckers' association can be formed to provide farmers with more

transportation options, breaking the monopoly of a local transporter. More trucks should mean greater competition and lower freight prices for farmers. Similarly, regulations that reduce the market power of a monopsonistic buyer in a supply chain can increase prices for any or all agents in the supply chain between the farmer and the buyer. Poor farmers need to become empowered within market chains in order to reap benefits from such changes. Otherwise, the benefits almost certainly will accrue to other chain actors.

(2) Gaining Access to Complementary Assets

Household assets shape activity participation (See Background Paper for Chapter 1). They also shape market participation. Rural households cannot be expected to benefit from a greater and more equitable access to markets if they do not have the multiple complementary assets needed to compete in those markets. These include human capital (education and know-how), natural capital (ownership of good quality land or access to other households' land via local land markets), physical capital (the ownership of assets such as livestock and machinery), public capital (access to public services and infrastructure such as good roads, schools, health clinics, and electricity), social capital (participation in organizations, associations and links to other individuals and households, both within and outside the community), financial capital (access to credit, insurance), and geographic capital (proximity to markets and favorable agro-climatic conditions). (See Jalan and Ravallion, 2002). Having access to markets may yield a positive economic return for a household, but this return may be small or even nonexistent unless the household has access to critical assets. For example, the ability to take advantage of commercial opportunities in an output market depends on also having access to skills, capital, high-quality land, and input markets.

Boughton, et al. (2006) find that participation in crop markets increases sharply as one moves into the upper tail of the land distribution in Mozambique. Other assets, including livestock, labor and equipment, are also positively correlated with crop market participation. And investments in roads and market information, without addressing these asset differences, are not likely to result in broad-based increases in crop market participation. They find a troubling relationship between gender and markets. Female-headed households, even if they have the same assets as male-headed households, are significantly at risk of exclusion from cash crop contract farming opportunities.

(3) Gaining Access to Complementary Markets

Many of the world's rural poor are farmers, so it is natural to focus on agricultural input and output markets when one thinks about the role of markets in rural poverty and poverty alleviation. This makes sense in countries or regions where poor rural households get most of their income and/or food from their own crop production. In a number of African countries, studies show that agricultural growth reduces rural poverty and hunger. There are also poor rural households in more urbanized and transition

countries that depend on farming for their livelihoods. Facilitating access to agricultural input and output markets in these cases is almost certainly a prerequisite for escaping from poverty.

Agricultural markets are not the only ones that matter, though.

Incomplete markets (e.g. for land, labor, credit, or insurance) explain why many poor farmers reap meager and uncertain returns from their land. Dorward et al. (2003) conclude that the poor are not likely to gain significantly as producers of tradable agricultural commodities as markets expand, unless they manage to get access to land, capital, and other key complementary markets and assets.

Even for agricultural households, other markets matter. Poor households lack the cash to invest in farm inputs. If fertilizer would boost output and profits, this may be of little consequence to a poor farmer who cannot borrow. An inherent challenge in agriculture is the need to purchase inputs months and, in some cases, years in advance of the harvest.

Another inherent challenge is risk. Nature supplies key inputs (rain, sunshine) free of charge but with uncertainty. The inherent risks of farming make banks reluctant to loan to small farmers. High transaction costs and information asymmetries between the bank and the farmer exacerbate this problem. All of these problems, plus highly covariate risks (when one farmer's crop fails, it is likely that many farmers' will) make formal crop insurance nonexistent for all but a few of the world's farmers and crops.

The importance of financial markets for the rural poor is discussed in detail in the Background Paper for Chapter 3. Typically, poor farmers face linked constraints in financial and agricultural input and output markets. The most obvious linkage is poor farmers' inability to pay for agricultural inputs when they do not have access to credit or savings, even if inputs are available and output can be marketed at competitive prices, the profits from selling a crop cannot be used to finance inputs prior to the harvest when credit is not available. If banks are willing to loan money to small farmers, the terms of the loan may discourage risk-averse farmers from borrowing, particularly if they risk losing their property should they find themselves unable to repay the loan, for example, if severe weather destroys the crop. Risk and credit constraints thus are inherently linked. A development project that enhances small farmers' access to input and output markets as well as credit is still likely to fail if it does not address the inherent risks of going into debt to finance crop production.

A similar problem involves consumption risk. Food security concerns may divert poor people from their farms into low-paying wage work, creating a vicious circle of low productivity and food insecurity. In Malawi, smallholders make up about 80% of the population and about 90% of the poor. Recently, the government has made the growth of smallholder production a cornerstone of its development and poverty-alleviation strategy. Policy reforms focus on improving smallholders' access to agricultural input and output markets, including the removal of restrictions on production and marketing of certain crops (particularly tobacco) and reforms in land and transport markets. The hope is that

these reforms will increase smallholders' access to new market opportunities and stimulate agricultural intensification and diversification as a means of reducing poverty.

There is evidence that many smallholders leave their land to seek work as casual laborers at low wages. The result is labor shortages on smallholder farms and low yields, as critical cropping activities are delayed or abandoned. Will improved access to agricultural input and output markets reverse this trend?

A recent study by Alwang and Siegel (1999) suggests not. It concludes that a combination of liquidity constraints and concern for food security create labor shortages on smallholder farms. Although wages are low, smallholders value the liquidity they provide as a means to achieve food security. Low returns to labor and land on smallholder farms, in turn, exacerbate food insecurity, thus creating a vicious circle. Development projects focusing on agricultural input and output markets are not likely to succeed unless they address these linked constraints associated with financial market failures, including risk.

According to Barrett, Reardon and Webb (2001 p. 321), "Missing credit markets can impede diversification into activities or assets characterized by substantial barriers to entry. Smallholders typically cannot afford to purchase a truck and enter the long-haul transport niche of the food marketing channel, no matter how profitable it might be (Barrett, 1997)." On the other hand, if non-farm or off-farm options can be accessed easily, but credit markets are thin or missing, non-farm earnings can be a means for overcoming working capital constraints and purchasing inputs for farming (e.g. fertilizer, seeds, equipment, labor) or to making capital improvements (e.g. bunds, ridges, irrigation) to one's farm (Reardon et al., 1994; Pietola et al., 1998; Reardon et al., 1999).

In some cases, nonagricultural markets can support agriculture. Labor markets can substitute, albeit imperfectly, for a missing credit market. So can migration: Income sent home by family migrants can stimulate farm investments by providing cash and security (Rozelle, et al., 1999; Taylor, et al., 2003). Wages from a son or daughter working off farm can help finance crop inputs and offer income security. Long-distance migration links many small-farmer households with labor markets where wages are not correlated with crop incomes back home. Remittances from migrants can provide income security and make farmers more willing to make investments that yield high expected returns but are risky. Of course, off-farm work and migration also can compete with agriculture for a poor household's limited time.

A new FAO study seeks to understand the ways in which off-farm income, primarily wages, influence crop production and activity choices in rural households. It finds both bad news and good news for agricultural production. When rural households have access to off-farm work, the opportunity cost of keeping their labor on the farm goes up, and this negatively affects crop production. The good news is that income from off-farm work improves smallholders' ability to purchase inputs and raise productivity on the farm. The challenge confronting development practitioners is not how to keep the labor on the farm; it is how to make off-farm income complement farm production and raise

incomes of the rural poor. This invariably means helping poor households get better access to not only financial but also input and output markets on favorable terms.

In other cases, credit may be available, but land is unacceptable as collateral (because laws make it difficult for banks to foreclose on the land) while evidence of steady off-farm cash income can enable one to borrow. In still others, land may serve as collateral, but poor risk-averse households are unwilling to put themselves in danger of losing their land if their crops fail, or are willing to do so only if they also have access to nonfarm income (Boucher). The result may be a diversification of poor households' labor and other resources into multiple, low-return activities. If, as is widely believed, risk aversion is decreasing in income and wealth, then the poor will exhibit greater demand for diversification for the purpose of ex-ante risk mitigation than the wealthy. The fact that diversification rises with wealth or income in both absolute and proportional terms in rural Africa (Reardon, 1997; Reardon et al., 1998; Barrett et al., 2000) underscores that the most vulnerable households lack the resources to diversify into nonagricultural markets.

Agricultural markets are not the major source of income for many rural households, even in the poorest countries. In a growing number of transition and urbanized countries, most rural income does not come from farming or farm wages (see Background Paper for Chapter 1). Consider Nicaragua and Guatemala, where small basic grain producers get less than 5% of their income from growing basic grains. The rest comes from a diversity of sources, including non-farm wages and migration. Trying to raise income in these households by improving access to staple markets almost certainly would be the wrong approach. In Easterly's (2002) words, it would be like trying to make more pancakes by adding salt, not flour; that is, focusing on the wrong ingredient.

The importance of non-agricultural markets in the income portfolios of poor rural households is highlighted by the study by Boughton, et al. (2006). It concludes that, for Mozambique households that do not have the necessary asset portfolios to escape poverty through crop market participation, there will need to be policies and programs that enable more remunerative household participation in off-farm labor market and non-farm entrepreneurial opportunities. This conclusion is echoed by Dorward et al. (2003), who argue that poor rural households unable to benefit as producers when agricultural markets expand may be able to benefit in other ways. Barriers to entry into nonfarm tradables production are likely to limit poor households' ability to benefit from those activities as self-employed producers. However, there is considerable potential for them to benefit indirectly, through employment on commercial farms and by providing nontradable goods and services to others who demand these things as their incomes rise. Local markets, particularly for labor, need to work in order for poor rural households to reap these indirect benefits.

Failures in agricultural input and output markets can prevent rural households from entering into nonagricultural activities where the returns to their labor may be higher. Missing land markets, for example, can help explain why a skilled blacksmith who inherits land spends scarce time farming although his comparative advantage lies in smithwork. Were land markets operative, he might rent or sell his land and devote all his

time to blacksmithing. But in the absence of land markets, and with labor market imperfections that preclude hiring others, his optimal use of time may well include relatively low productivity farming, lest his land asset return nothing to him. In China and (prior to recent changes in land tenure laws) Mexico, farmers had to work their lands or else risk having the government redistribute them to other households. Reforms of land institutions that enable farmers to rent, buy and sell land can lead to higher incomes both on and off the farm.

A poor household that does not produce a cash crop might begin doing so if it had access to the right input and output markets. One has to understand poor households' actual *and potential* income strategies, as well as the market challenges confronting them, in order to help them find a pathway out of poverty. For a given poor rural household, the answer may be agriculture, but it also may lie in non-agricultural activities. Either way, having access to efficient markets is fundamental.

(4) Strengthening Market Linkages

A market has direct importance to a poor rural household whose income depends on having access to the market. Without access to input and output markets for a cash crop, a household will not reap benefits by producing the crop. Without access to employment or the skills needed to get a job, a worker is forced to scratch out a livelihood at home, most commonly as a subsistence producer. An important pathway out of poverty involves helping poor rural households acquire access to these critical input and output markets.

Markets can affect rural poverty in less direct ways, though. One of these is through consumption linkages. If some rural households obtain income by producing for markets, their demands for goods and services offered by *other* households will increase. This is illustrated in Figure 4.7. A policy or market change that directly affects a non-poor household (say, a commercial farmer) induces that household to adjust its production and consumption activities ((a) in the Figure). In the process, it creates new linkages with the non-farm sector but also may increase its demand for goods and services supplied by other rural households (b). Studies of village multipliers find that when one household's income from outside the village increases by $1, total village income can increase by $2 or more because of these linkages. If the households supplying the good or service are poor, poverty may decrease. It is not difficult to find village brick layers, butchers, and even hair dressers whose businesses would dry up if *other* village households did not have access to the markets from which they get their income. To put these more complex webs of markets to work, poor households need access to the markets linking them to the other households' demands, as well as the capacity to meet those demands.

(5) Gaining Access to Diversified Income Sources

Some rural households specialize in agricultural production, but in most of the developing world rural households get income from a diversity of production and labor activities. Diversification offers clues about how effectively different markets work for the rural poor. When a household has full access to all markets on favorable terms, it can specialize in the activities that it does best. Early economic thinkers like Ricardo argued that diversification usually comes at a cost, and economic research confirms this, particularly for the poor. The most common explanation for diversification is risk: by spreading its investments across multiple activities whose returns are not highly correlated, a household can reduce its exposure to income shocks in any one activity. In doing so, it loses the efficiency gains from specializing in the highest-return activity. If the household had access to other forms of income insurance, it could protect itself from risk without forfeiting the benefits of specialization. Index insurance linked to micro-credit is an example of how new strategies for financial-market development are trying to enable agricultural households to produce more efficiently (Carter, et al., 2007).

Market failures can lead households to diversify or block their entry into high-return production activities. High-return cash crop production typically comes with a list of requirements that are beyond the reach of many poor households, including access to input and output markets, land, and capital; the know-how to adopt new crops and associated technologies and enter into contracts with buyers at high prices; and the quality, quantity and timing requirements of new supply chains shaped by the demands of processors, supermarkets and agricultural exporters. Lack of access to well-functioning consumer markets or the risk of having to pay high food prices at certain times of year create incentives for households to devote some or all of their land and other resources to food production or low-paying wage work, even if higher-return activities are available. A household's production and income portfolios reflect these market constraints. In some cases, households engage in cash crop production but divert some of their resources to lower-return staple production or wage work. In many others, market failures prevent cash crops from entering the production mix. Omamo found evidence that agricultural households close to markets specialize (the white area in Figure 4.8), but the more isolated the household is from markets, the greater its diversification into multiple crops (the black area).

Absent or poorly functioning markets impose two constraints on producers. First, they take away producers' *flexibility* in changing their choices of what to produce and how. Second, as prices and other factors in the economy change, producers are less *responsive* when shifting their variable inputs.

The early stages of China's agricultural reforms provide a striking illustration of why markets matter. Under China's Household Responsibility System in the 1970s, small farmers became residual claimants to the returns from their production, keeping the profits from what they produced while also bearing the risk of losses. While still maintaining control over markets, China's government increased the purchase prices of crops. After 1984, China enacted far-reaching market reforms, further lifting restrictions on trade, commercializing the state-controlled grain-trading system, and investing in market infrastructure. By the mid-1990s, most food commodities were marketed by farmers at market-determined prices. The result was a sharp increase in the growth of

agricultural output and major declines in rural poverty. Studies suggest that in some countries, including China and India, economic growth associated with agriculture is more effective at reducing poverty than growth outside of agriculture.

Enabling poor rural households to get access to new income sources can help them directly, by increasing and smoothing their income and consumption, as well as indirectly, by providing them with the liquidity and security they need in order to invest.

A first step in enabling poor households to achieve a more favorable income activity mix is to identify the impediments to the smooth functioning of product and factor markets, including markets for cash crops, labor, land and capital, which condition households' on- and off-farm investments, and their access to complementary assets, particularly skills and know-how.

(6) Overcoming Market Isolation

Geography is often pointed to as a determinant of chronic poverty: natural resource constraints, poor soils, lack of reliable rainfall, climate-dependent infectious diseases. Geography and market access often go hand in hand. Rugged terrain and poor roads often isolate chronically poor households from input and output markets. Not only do they make it costly to market output and purchase inputs, they also limit the information rural households have to make good production decisions.

Non-poor households can fall below the poverty line if weather shocks cut off their market access. Poor roads that become impassible in storms may prevent a household from selling its produce or acquiring key inputs. They also may deprive poor households of affordable consumption goods, driving up the local price of food and other items. When this happens, even the best conceived market support programs may fail to achieve their poverty-alleviation objectives. Some rural households have the assets to overcome and even prosper from geographic barriers: a 4-wheel-drive vehicle can allow a rich family to stay connected with market centers even during inclement weather, and also to demand a high price for the goods it brings back from town to sell in the village.

The World Bank reports that just over 60% of the rural population in developing countries live in favored areas where there is irrigation and little moisture stress and medium to good market access (fewer than 5 hours from a market town of 5,000 or more). However, in Africa two-thirds of the rural population lives in less-favored areas, with poor market access. Using agriculture to reduce poverty requires targeting poor households in more favored areas as well as combating extreme poverty in less favored ones.

(7) Securing Access to Market Information

Roads carry not only people and goods, but also information about markets, technologies, etc. Lacking a reliable, efficient and low-cost communications system, a farmer or trader must travel, sometimes over long distances, in order to obtain market information. Advances in communications make it possible to decouple transportation from communications to a great extent. Cell phones can enable farmers and intermediaries to obtain information about markets without leaving their villages (see Part III).

By linking cell phones to market exchanges in regional commercial centers, even small farmers can overcome tremendous informational asymmetries that have limited their bargaining power in traditional supply chains. Knowing at what price their crop is selling in town can provide farmers, and especially groups of farmers, with a base from which to negotiate with traders for higher prices at the farm gate.

(8) Avoiding Poverty Traps

New research is finding that there are critical thresholds of wealth that people have difficulty crossing from below (Barrett, 2005; Lybbert et al., 2004). Once a household drops below a critical threshold, poverty is likely to persist for a long time. The fundamental distinction between transitory and chronic poverty arises from the existence of these threshold effects. For example, if a family's herd drops below some critical size, it will no longer be sustainable, whereas above the critical size it will continue to grow. This is illustrated in Figure 4.9, which relates heard size in a given year (t, the horizontal axis) to herd size in the following year (t+1, vertical axis) in a pastoralist population of Ethiopia. Herd sizes to the left of the shaded "recovery zone" are not sustainable; the size in the next period is smaller than that in the present period, eventually falling towards zero along the sold curve. For herd sizes within the recovery zone, the opposite is true. The challenge, then, is to keep poor households from falling below the recovery threshold, which in this region is estimated at 3 head of cattle.

Access to markets can play a critical role in enabling rural households to avoid poverty traps. For example, a poor household's ability to obtain a high price for its animals on the market can make the difference between being able to invest in new breeding stock to stay above the critical threshold and not. Access to input markets, for example, veterinary medicines, can make the difference between losing an animal and dropping below the critical threshold and not.

More likely, the capacity to avoid a poverty trap depends on having access to multiple markets. Without access to credit, a liquidity-constrained farmer may have to sell his livestock at a low price during a drought, fully expecting to have to buy new animals at a higher price to renovate the herd later on. In effect, the farmer is forced to "borrow" through the product market. It is rarely the case that a single market constraint is solely responsible for a household falling below the poverty line and into a poverty trap. Barrett (2005, p. 56) notes that: "In places with good market access and favorable agroecological endowments...poverty traps are less acute, trapping fewer people."

Low incomes, 'thin' markets (with small volumes traded and large seasonal variability in supply and demand), poor infrastructure, difficulties in enforcing contracts, and poorly regulated rent-seeking by politicians, bureaucrats, criminals and private-sector actors make it difficult to develop supply chains, locking the rural poor into a "low level equilibrium trap" by dampening incentives to invest along the supply chain (Dorward, et al., 2004). The key to getting people and regions out of poverty traps is to create a minimum level of investments above critical minimum thresholds. Even here, some researchers argue that the very poorest should not necessarily be the primary targets of programs to eliminate poverty traps. A project that targets households just below the poverty-trap threshold is likely to be more effective than one that targets even poorer households that will not make it above the minimum threshold as a result of the project intervention. As Barrett, et al. (2008) write, "In the presence of poverty traps, modestly regressive targeting based on critical asset thresholds may have better long-run poverty reduction effects than traditional needs-based targeting."

Avoiding poverty traps can involve improving poor households' access to agricultural input and output markets. Agricultural households that do not have access to input and output markets (due to high transaction costs, lack of information, small scale, inability to comply with quality standards, etc.) are more likely to be chronically poor. They are also more likely to fall below the poverty line and become transitorily poor when misfortune strikes. This is particularly so when one takes a dynamic perspective. If a nonpoor household gets better access to agricultural input and output markets, it may be able to distance itself from the poverty line and create an asset base (savings, livestock, etc.) that can keep it from falling into poverty in the future, a sort of self-supplied safety net. The perishability and low value-to-bulk ratio of food crops makes access to markets particularly crucial to profitability. Good market access can both keep agricultural households from falling below the poverty line and enable chronically poor agricultural households to climb out of poverty.

(9) Making Sure Consumption Benefits Reach the Rural Poor

Poor rural households spend a disproportionately large share of their income on food. For example, in six countries studied by Karfakis, et al. (2008), the food budget share for the poorest quintile of rural households ranged from a low of just under 60% (in Guatemala) to more than 75% (in Nepal). Even though poor rural households in these countries get 20 to 70 percent of their income from farm and related activities, higher agricultural prices were found to reduce welfare in poor rural households because of increased consumption costs.

Greater integration with markets does not automatically lower consumption costs for rural households. If there are intermediaries with market power, they will attempt to capture rents by buying cheaply and selling dearly. When some agents hold market power, there is no guarantee that the benefits of lower consumption prices will be transmitted to the rural poor.

It is also possible that outside demand for the goods and services supplied by rural households will push up consumption prices in some rural areas. This could happen, for example, if a new road or export opportunities connect an agriculturally rich but isolated village to outside markets. Without these, food production would be "trapped" in the village and food prices would be low. Such cases probably are rare, however, because historically the agriculturally rich areas have been among the first candidates for road projects, and many already sell in outside markets. It is more likely that access to new markets will lower prices for consumers—a clear benefit for rural poverty alleviation.

Securing Access to Multiple pathways out of poverty

As the diversification of rural incomes suggests, there are multiple pathways out of poverty, and these pathways may be different for different rural households or even for the same rural household at different points in time. They may include agricultural intensification (via the adoption of new crops and technologies) and commercialization, critically involving both agricultural input and output markets. They also may include transitioning from agricultural to nonfarm activities, participating in rural nonfarm labor markets, or migration. Many rural households use a combination of these strategies. Access to agricultural, nonagricultural, labor and migrant-labor markets shape households' capacity to make the choices necessary to escape from, and stay out of, poverty. The key is to have some pathway out of poverty, so that choices can be made that lead to the accumulation of enough productive assets to earn a surplus above what is needed to stay out of poverty. When getting high returns on assets depends on wealth-determined market access, a key to rural poverty alleviation is extending market access to the poor.

III

Successful Responses and Hard-Won Lessons

The Market Development Challenge

Views on whether and how markets can be made to serve the rural poor are bracketed by two extremes, those of market skeptics and market fundamentalists (Dorward, 2003).

The skeptical view is that poor rural households face such an unlevel playing field that they cannot possibly be expected to succeed by competing in the marketplace. We offer two responses to this view. The first is practical: market integration is a fact of life, and if poor rural households do not benefit from it they may well do the opposite. The second is optimistic: there are a growing number of cases in which poor rural households have successfully overcome challenges in making markets work for them, as well as successful projects to assist them in doing so. Markets can indeed contribute to broad-based poverty–reducing development.

The market fundamentalist view is that providing access to markets is a sufficient condition for such development. This perspective is overly optimistic, because many stakeholders, particularly the rural poor, lack the complementary assets and empowerment that are required to successfully compete in markets. Improving market access without addressing deprivation with regard to complementary assets is not likely to succeed in reducing poverty.

Economic growth, facilitated by the expansion of market activity, is a necessary condition for nationwide poverty reduction, but it is not a sufficient condition. Growth of agriculture and other rural sectors can have significant impacts on rural poverty, as can urban growth when linked to rural household welfare, through food and labor markets or migration. Development efforts that focus on agriculture can have significant impacts on rural poverty, but only when poor households get an important fraction of their incomes from crop production, agricultural wage labor, or demands for goods or services stimulated by rising farm incomes. Often, however, they do not. In the future, rural poverty reduction will have to rely on more than broad-based growth. Instead, it will depend on the success of targeted, pro-poor policy interventions (Huang, et al., 2008).

Lessons can be learned from past failures of agricultural policies. One lesson, highlighted by the 1984 *World Development Report*, is the high cost to the economy in general and agriculture in particular when governments interfere in input and output markets. Today there is much less latitude in governments' ability to directly interfere with the workings of agricultural input and especially output markets under the rules of the WTO. It is wrong for governments to completely distance themselves from markets, however. Governments have an imperative to ensure that markets work fairly and equitably, regardless of socioeconomic status, gender, ethnicity, or other characteristics of rural stakeholders. There is still a long way to go on this count. Asymmetric market power, including monopolistic and monopsonistic power of market agents, corruption, and discriminatory practices, create an uneven playing field, particularly for the rural poor. The fundamental theorem of welfare economics breaks down when markets are imperfect, opening up a wide berth for policy and program interventions to improve both equity and efficiency.

Access and capacity to take advantage of remunerative and equitable markets is a priority challenge for most poor rural people. A major development policy challenge is enabling rural households to compete and make use of the new market and policy environment. At a grassroots level, this means understanding the obstacles that lie between rural people and the marketplace. Supply-side constraints, including access to technology, extension, inputs, and financial services, result in sharply decreasing returns in crop production, higher costs, and lower profits. High transaction costs related to inadequate infrastructure, lack of storage facilities, and lack of access to cheap transportation, create a gap between market and farmgate prices, squeezing profits. So do asymmetric power relations along the supply chain. Lack of access to reliable information about output markets (buyers, quality requirements, prices), inputs (reliable input providers, input prices) and production (new technologies and agro-ecological constraints) further constrain production decisions by small farmers. Information asymmetries and risk shut small farmers out of financial markets. These problems result

in production decisions that diverge, often sharply, from what they would be with good access to markets.

Each of these constraints represents a logical point of entry for development programs. The first step in addressing rural poverty is to ascertain which of these constraints or combination of constraints is most binding at a grassroots level, from the perspective of the rural poor. This, in turn, requires understanding the diversity of rural income strategies. Some markets are more important than others to a particular rural household, multiple markets and complementary assets matter, and no single market-development model is capable of representing all or even the majority of poor rural households. No "one size fits all" policy can alleviate poverty in rural households with substantially different characteristics and access to markets. Designing poverty alleviation policies and programs requires understanding, first, the changing market context in which the rural poor find themselves, and second, the challenges confronting them within this context.

Many projects have been implemented to address rural poverty, some by governments, others by NGOs. Some have succeeded, many have failed. Successful projects invariably are ones in which clusters of concrete challenges confronting poor rural households are understood and measures are designed to enable poor households to overcome them. Although there are many commonalities, these challenges tend to be context specific.

The changing rural context creates new challenges for rural households as well as for development practitioners. To compete, rural households have to be able to adjust to a changing and unpredictable economic environment. To be successful, development projects need to understand the livelihood strategies of the rural poor and the market obstacles they face in pursuing these strategies, which are different for different households in different contexts.

Helping rural households access new market opportunities requires public investments in rural education and health, rural infrastructure, collective action to increase farmers' competitiveness, agricultural R&D, improving land tenure so that asset-poor households can acquire access to land, facilitating micro-credit development, and making input and output markets work more efficiently. Better education and health boosts not only farm productivity but also the capacity to find more lucrative off-farm work (Schultz, 1975; Zhang, Huang, & Rozelle, 2002). Improvements in rural infrastructure, such as roads and rail, create the possibility of bringing a larger share of the price eventually received at the end of the marketing chain to the farm gate. They also make urban and nonfarm rural jobs more accessible. Agricultural R&D, by raising agricultural productivity, can enable small farmers to compete in new as well as existing markets. Improvements in the land tenure system can enable poor households to gain access to land in local land markets. They also increase the incentive to invest in land and enhance the collateral of farm households. If accompanied by improvements in rural financial markets, investments by farmers back into agriculture could rise. In some places, including in China, smallholder incomes could rise further if governments relaxed

informal taxes/levies on farmers and removed remaining distortions that depress the prices of agricultural commodities (Anderson, et al., 2004).

Meeting these challenges often requires partnerships between rural stakeholders, governments, and development agencies. Just as governments are withdrawing from agricultural markets, so are development agencies. NGOs are realizing that their role is to facilitate the integration of small farmers into new, sustainable market chains and strengthen their position in existing markets, rather than playing a direct role in these markets. Projects that subsidize small farmers or in which an NGO or government entity occupies a link in the market chain are unlikely to survive once the project ends.

Experiences from the plethora of projects that have attempted to make markets work for small farmers yield insights that can and should shape future initiatives. Some concrete examples of successful responses to the changing rural economic environment are presented below. We first consider government policies and their effects on rural poverty. Then we turn to the experiences of NGOs.

Policy Options for Alleviating Poverty

Market Integration: Lessons from CAFTA (Sub-challenges 4 and 9)

Developing countries increasingly are becoming parties to regional and global trade integration initiatives. In many cases, markets within countries are also becoming better integrated. Market integration means that the prices shaping producers and consumers' decisions are determined in outside markets. A policy that restricts imports of cheap agricultural goods, with quotas or high tariffs, is similar to a poor road that limits access to cheap food in town, in the sense that both protect the food producer while hurting consumers.

Market integration, whether international or domestic, offers tremendous advantages to rural households, including the poor, but it also poses dangers. When rural households have access to well-functioning markets, food security does not imply self-sufficiency. (It does, however, require having the cash to purchase food in the market.)

The effects of economic integration on rural poverty are complex in part because of poor rural households' dual character as producers and consumers. A household that both produces and consumes staples is invariably affected both positively and negatively by the same staple-price change.

In 2006 the countries of Central America and the Dominican Republic embarked on a new market experiment: a free-trade agreement with the United States. The stakes are high from a rural welfare point of view. Rural poverty ranges from 60% of all rural residents in the Dominican Republic to 86% in Honduras. The main immediate effect of CAFTA will be to phase out tariffs on food imports, which ranged from 10% to 62% for grains and as high as 164% for chicken (legs and thighs). CAFTA is also being implemented in a context of generally deteriorating agricultural trade balances.

What are the likely impacts on different rural household groups? An Inter-American Development Bank study concluded that there will be little effect on the incomes of many smallholder households, who do not sell grain or meat and thus will not lose from cheaper grain imports. In general, the larger commercial households lose more when the market prices of grain and meat fall.

With few exceptions, though, the welfare of rural households increases, because the benefits of lower food-consumption prices outweigh any loss in cash income that they might experience (Taylor, et al, 2006).[4] This is particularly true for the poorest rural households, which spend most of their income on food.

One key to ensuring that poor rural households, particularly the landless, benefit from trade integration is *making sure that the lower consumption prices reach the rural poor*. The other is to make sure that poor rural households have access to new jobs in cash-crop and non-agricultural production.

The most important things government policymakers can do to help markets work better for the poor fall into three broad areas.

The first is to create an economic and political environment in which markets can flourish in rural areas, and in particular, not to intervene in ways that impede market development. This includes not only wise macroeconomic policies, which would be conducive to growth in any sector, but also sectoral policies that do not discriminate against agriculture—for example, cheap food policies intended to keep urban consumption costs and wages low. It also includes political stability, fighting corruption, and avoiding regulations that promote rent-seeking by public and private entities. When public policies create opportunities for individuals to capture rents instead of contributing to rural development, they will. Even well intended policies often have unintended consequences, and these generally do not favor the rural poor, who invariably are the weakest links in the chain.

The second priority for public policy is to create a level playing field so that farmers have access to markets and the capacity to benefit from them. Investing in public goods, from roads to communications networks and rural education, is paramount. So is vigilant monitoring and regulation to ensure that markets do not discriminate against particular social groups: the poor, ethnic minorities, women, etc.

The third priority is to target poor households with programs that will enable them to have better access to markets and the capacity to use them. The conditions of poverty, by their very nature, create an unlevel playing field. Targeted interventions to help poor households overcome obstacles to benefiting from markets is a flash point at which coordinated interventions by governments, NGOs, and private actors come together. It is unlikely that any of these three sets of actors can do it alone. The imperative for targeted programs is greatest where the rural poor have to adjust to a rapidly changing market

[4] By an increase in welfare we mean that the compensating variation or transfer needed to leave the household no worse off after market integration is negative.

reality, as is the case with far-reaching market reforms. Adjustment policies are crucial during a transitional period, at least.

Creating a Stable Economic and Political Environment

A central message of the 1984 *World Development Report* was that government policies created market distortions that discriminated against agriculture in developing countries. Since that time, developing countries have made progress towards removing policy distortions that discriminated against agriculture, particularly small farmers, but much remains to be done. According to World Bank (2008, p. 10),

> *Recent reforms have improved price incentives for agricultural producers in developing countries, reducing but not eliminating historical policy biases against agriculture. Between 1980–84 and 2000–04 net agricultural taxation declined on average from 28 percent to 10 percent in agriculture-based countries, from 15 percent to 4 percent in transforming countries, and from marginally negative protection to net protection of 9 percent in urbanized countries. However, a low level of net taxation hides a combination of protection of importables and taxation of exportables (especially in the agriculture-based and transforming countries), which can both be high...Hence, considerable room remains for further efficiency gains through reforms in developing countries' own trade policies.*

Creating a Level Playing Field (Sub-challenges 1, 6 and 7)

Removing policy distortions can increase the efficiency of agricultural producers, but only if they have access to markets. Because isolation is such a large correlate with poverty and is detrimental to income growth, many development projects have focused on road construction and rehabilitation to bring more people to markets. Assessing the impact of roads on poverty is very difficult, because the placement of roads and road projects is not random. Comparisons of places with and without roads can be deceptive. Countries and localities purposely build roads in particular locations, for example, where there is economic potential or, if road construction is funded locally, where the resources exist to pay for them. In general, studies conclude that roads are a necessary condition for rural economic growth, but a good road is not sufficient to ensure that the benefits of this growth reach the poor.

Estimates for Madagascar suggest that a 50 percent per kilometer reduction in travel time on feeder roads would increase rice production by 1 percent, and the same reduction in travel time on highways would raise rice production by 1.3 % (Jacoby and Minten, 2007). In Kenya, inadequate public investment in roads discourages low-cost, high-volume transportation providers, resulting in "high farm gate input costs; low farm

gate output prices; low traded volumes; volatile markets; [and] low productivity" (Obare, et al., 2003).

Four to six years after road rehabilitation in Vietnam, markets were more likely to develop and were held more frequently, and more households diversified into trade and service activities as a result of road improvements, according to a study by Mu and van de Walle (2007). Road passenger transport services were more likely to respond where markets were already established and natural disasters were relatively infrequent. The same study found that the availability of goods in the market improved more when roads were built or improved in mountainous areas, where geographic constraints are greatest.

A study of the impacts of road rehabilitation in Georgia found that in the aggregate, opportunities for off-farm and female wage employment were significantly increased in project villages that received the new and improved roads compared with comparison villages that did not. The gains in off-farm employment from better roads were confined mainly to non-poor households; however, the gains from extra female wage employment tended to be for poor women. This study found no impact of road quality on sales of agricultural products.

In Nepal, where rural poverty fell in the last decade largely because of rising nonfarm incomes and remittances, better road access disproportionately benefited the rural poor (WDR, p. 120). Access to all-weather roads in 15 villages in Ethiopia reduced the incidence of poverty by 6.7 percent (Dercon et al., 2006).

In Vietnam, rural road improvements were found to increase the variety of goods ─ primarily fruits, vegetables and meats ─ that households sold in the market, but on further investigation these effects were found only for households in the north of the country, and more so for better-off and educated households. Rural road rehabilitation in Vietnam resulted in the rural poor engaging in more casual wage labor. Low education households increased their participation in trade and service activities.

Creating a level playing field involves more than simply building roads. It also includes investing in information creation and access, market infrastructure, and rural education—assets that are critical complements to markets. When wealthy farmers have access to good market information but poor farmers do not, the results are likely to be detrimental to both production efficiency and equity. Throughout the developing world, there is a huge need for public investments in both creating information and ensuring that small farmers and poor rural households have access to it. The importance of access to information on agricultural markets is illustrated by the large budgets that developed countries devote to it.

In Niger, the construction of cell phone towers was found to reduce differences in grain prices across markets as well as lowering the variation in grain prices across seasons. The greatest impact of cell phones was on price differences between places connected by low-quality roads. The primary mechanism by which cell phones affect prices appears to be a reduction in search costs, as grain traders operating in markets with cell phone coverage search over a greater number of markets and sell in more markets.

This positive information effect increased with distance and also over time, as traders adjusted to the new communications technology. Cell phones appear to have improved both consumer and trader welfare, perhaps averting an even worse outcome during the 2005 food crisis. Construction of a cell phone tower increased per-capita consumption of grain by an estimated 4.5 kilograms per year (Aker, 2008).

Improved communications cannot help small farmers unless there is useful information to convey. Linking information exchanges to cell phone technology can be a promising means of creating a level playing field with respect to information.

Multi Commodity Exchange[5] of India has been in operation since November 2003. In 2007 it operated from more than 800 centers, with more than 1,600 members and 12,000 trading terminals, as well as through many private networks and internet terminals, covering more than 30 agricultural commodities and many other commodities and financial instruments. It was the world's fastest growing futures exchange in 2005 and 2006, becoming the world's 10th largest futures exchange in 2006, surpassing the value of transactions conducted at the New York Board of Trade. [6]

Through linking technology developments with spot exchanges, handling and transport of physical commodities and futures exchanges, many of the instruments used for financing and risk management are now available to farmers in the remotest parts of India. Stand alone trading stations in places where roads do not reach are linked via satellite connections to spot and futures markets. Mobile telephony connected sub-brokers have enabled price information to reach farmers who otherwise would not have any means of obtaining it.

These farmers are now able to base their production decisions on information generated in markets where the price discovery process is transparent; demand better quality seeds that allow them to produce products of a quality that they can deliver to the exchanges; and deposit their products in exchange for warehouse receipts that can be used as collateral to borrow money from financial institutions, without feeling the need to sell crops immediately after harvest. All of this potentially brings new capital into rural areas, creating new employment opportunities and helping improve farmers' income.

Lowering transactions costs and improving access to information will always achieve welfare gains in the aggregate, but the effect on agricultural production and local welfare is not always clear. New market linkages and better information can enhance agricultural production and affect land use, crop intensity and other production decisions, but it also can stimulate off-farm diversification and encourage migration. Aggregate output and income gains are likely, but there are almost certain to be losers, too, when relative prices shift against the interests of some people.

[5] L. Rutan, *India: developing a new ecosystem for agricultural trade, risk management and trade*, International Conference on Commodity Exchanges and their Role Market Development and Transparency, Istanbul, Turkey, May 2007.

[6] In the 2006/07 season the average monthly turnover was US$ 42.27 billion.

Improved access to information and roads is likely to improve welfare only if there are not other market failures standing in the way. Even then, it is conceivable that better information among traders will not benefit small farmers, unless the latter are poised to make use of the information to enhance their bargaining position in the market. It is possible, for example, that access to cell phones could enable traders to buy from farmers with the lowest prices, and consumers in high-production villages could lose if traders are able to identify new markets for grain, buying up local supplies and driving up prices. In the case of Niger, however, both traders and consumers were found to benefit.

Whether poverty falls as a result of better roads and information is ultimately an empirical question. This ambiguity makes it clear that infrastructure development is a necessary component of rural development, but it is not in and of itself sufficient to reduce poverty. Poor road conditions are likely to coincide with other bottlenecks to agricultural production and economic development, including poor agro-climactic endowments, low population density, limited transport services, low education levels, poor access to health services, lack of electricity, risk, credit, access to irrigation, and other market failures. A recent study by Mu and van de Walle (2007) notes in regard to roads that there is an "ambiguity about impacts on market and local area development...when road benefits depend heavily on geographical, community, and household characteristics, project design may also need to consider complementary inputs and policies to achieve the full potential benefits from the road."

Technological changes can reshape markets and alter the playing field, to the benefit of some producers and the detriment of others. In Brazil, before the introduction of long-life, or UHT, milk, trade took place in regional markets, where local producers and a few companies competed. After the introduction of UHT, milk could be produced in one region and shipped to distant markets. Thus, all companies could compete in any local market. This benefited large companies but disrupted local markets, as farmer coops were unable to compete with large UHT suppliers. The market structure shifted in favor of large dairy plants. Many cooperatives, and some traditional milk basins, disappeared (de Souza Filho and de Oriani Paulillo, 2004). Governments need to make special efforts to create a level playing field in dynamic technological and market environments.

Income and Poverty Policies Targeting the Rural Poor (Sub-challenges 2, 5, 8)

In addition to creating a fertile economic and political environment and investing in such public goods as roads, information, market infrastructure and education and health, policies need to target poor rural households if a goal is to provide these households with access to markets and the capacity to use them. For example, a poor rural household may not be able to afford to send a child to school, a reflection of failure in educational markets, and access to a road may do little to stimulate production by a poor household whose assets have fallen below a critical threshold and into a poverty trap.

In the 1990s, Mexico instituted two novel income transfer programs. One (PROCAMPO) was an unconditional transfer program aimed at assisting farmers of sensitive food crops during the adjustment to free trade. The other (PROGRESA/OPORTUNIDADES) was a conditional program designed to assist poor households while building human capital. Both included poor farmers, and it was hoped that one of their effects would be to enable poor households to overcome selected rural market failures. Both offer valuable lessons for designing and implementing rural poverty alleviation policies.

Lessons from PROCAMPO

PROCAMPO was implemented in the winter 1994 agricultural season to compensate farmers for potential losses resulting from lower grain prices under the North American Free-Trade Agreement (NAFTA). A series of additional objectives were added to the primary objective of compensation for trade liberalization, including improving competitiveness and helping small farmers shift from grains to higher valued crops that were expected to benefit from market expansion post-NAFTA. Eligibility was based on cultivation of any of nine key crops (maize, beans, rice, wheat, sorghum, barley, soybeans, cotton and cardamom) in the three agricultural years prior to and including August 1993. Since the majority of land owners in Mexico are male, the eligibility roster is primarily made up of men who own land. Farmers did not have to sell in order to qualify for the payment: Even subsistence farmers received 1,160 pesos (about US$116) per hectare cultivated in qualifying crops prior to the policy's implementation. There was no conditionality in this program: farmers did not have to continue producing any of the key crops, or any crop, in order to receive the PROCAMPO payment.

The PROCAMPO policy was expensive (just under US$1.5 billion in 2005). Most of the benefits did not accrue to small farmers. The 10% largest farmers 35% of the PROCAMPO transfers, while the smallest 50% (each with fewer than 2 hectares) received only 13% of the benefits. PROCAMPO did not achieve the goal of stimulating a shift from grains to higher-value crops in response to new market opportunities. In 12 years, only 5.8% of PROCAMPO recipients reported changing crops. A key lesson from PROCAMPO is that complementary programs are required to improve the production capacity and market access of poor agricultural households receiving transfers. No such programs were included with PROCAMPO. (See Davis and Winters, 2007 and Dyer, 2007.)

Lessons from PROGRESA/OPORTUNIDADES

OPORTUNIDADES is the cornerstone of the Mexican government's strategy to reduce poverty. Launched in 1997 under the name PROGRESA, the program provides income transfers to poor households conditional upon their children regularly using health clinics and attending school. The goals of this program are twofold: (i) to directly

reduce poverty by giving poor women cash payments, and (ii) to increase poor households' investment in the human capital, which is critical to reducing the inter-generational transfer of poverty. Where low levels of schooling and poor health limit households' access to agricultural input and output markets as well as their productivity on the farm, this program could have a direct (albeit long-term) positive effect on agricultural production in poor rural households. The cash transfer can also enable poor households to overcome liquidity constraints on the purchase of agricultural inputs, raising crop production in the short run. Both can also increase access to non-agricultural markets and non-agricultural production. There is evidence that in Mexico and elsewhere, higher schooling induces rural households to shift into non-farm activities, particularly non-farm wage work (Taylor and Yúnez-Naude, 2000).

Studies show that OPORTUNIDADES achieved both goals of reducing poverty and stimulating investments in human capital. It does not seem to have stimulated agricultural production, however; on the contrary, higher children's education and the time required to comply with the program's conditionality requirements appears to compete with agricultural production and strengthen poor households' connections with non-farm labor markets (Winters and Davis, 2007).

Both PROCAMPO and OPORTUNIDADES / PROGRESA are expensive, and they do not appear to have facilitated adjustments in small-scale agriculture. OPORTUNIDADES / PROGRESA, however, appears to have had a significant favorable effect on rural poverty, by targeting poor rural households and promoting human capital formation (schooling and health).

Conditional cash transfer programs similar to the Mexican model have been implemented in a growing number of developing countries, including ones with much lower income than Mexico. According to Nancy Birdsall, president of the Center for Global Development, "...These programs are as close as you can come to a magic bullet in development. They are creating an incentive for families to invest in their own children's futures. Every decade or so, we see something that can really make a difference, and this is one of those things" (*New York Times*, January 3, 2004).

A key lesson of transfer programs is that, unless there is conditionality tied directly to crop or livestock production and access to agricultural markets, small-scale agriculture will not necessarily benefit even if programs are successful at reducing rural poverty. If under-investment is due to market failures, simply increasing a poor household's income with a cash transfer will almost certainly have a negligible effect on investment. Conditionality, on the other hand, creates a price as well as income effect; in the case of OPORTUNIDADES / PROGRESA, it effectively lowers the price of schooling and health, inducing poor households to invest in both. It is not clear why one would want to make a cash transfer to poor households conditional upon investment in agricultural production—or in any other specific income activity, for that matter. Nevertheless, interventions to reduce the cost of accessing agricultural input and output markets clearly would be necessary complements to cash transfers if a policy goal is to stimulate small-scale agricultural production by poor households. If failures in

agricultural input and output markets limit the potential for cash transfer programs to benefit agriculture, these failures need to be addressed.

Pan-territorial pricing in agriculture (what not to do) (Sub-challenges 6 and 9)

One way governments have attempted to level the playing field is through pan-territorial pricing policies, that is, raising food prices in low-price zones and/or lowering prices in high-price zones. Such policies can shelter producers from variations in crop prices over space or time, but they create winners and losers: They benefit farmers (while hurting consumers) if they raise food prices at times or places where prices are low, and they hurt farmers (while benefiting consumers) where prices are high. To raise prices for farmers in low-price areas without raising prices to consumers, government subsidies are required. As a result, these programs tend to be expensive. They also redirect investments among crops. Production of a crop rises in places where the policy raises the market price and falls in places where the policy lowers the market price.

Smale and Jayne (2003) note that pan-territorial pricing proved particularly expensive in Zambia and Zimbabwe, since it raised the share of grain from smallholders in remote (but often agronomically high-potential) areas where transport costs were high. In Zambia, when pan-territorial pricing of maize was abandoned, there was a shift in cultivation from maize to crops such as cassava, groundnuts, and sweet potato (in the more remote northern and northwestern areas of the country) and to cotton (in the more commercialized areas). Maize remained the main food crop in most parts of the country, but its role as a commercial cash crop fell sharply.

Some poor households in remote areas are surplus food producers. They benefit when a pan-territorial pricing policy raises food costs. However, most farmers are net buyers of food. Poor households that are net buyers become poorer when their consumption costs increase as a result of pan-territorial pricing policies.

Input subsidy programs (Sub-challenge 3)

Countries also have experimented with input-subsidy policies. However, such policies are costly, create distortions on the input side, foster corruption, and benefit large farmers more than the poor, without addressing the fundamental reasons for high input prices. As Kelly and Crawford (2007, p. ix) write with respect to fertilizer in sub-Saharan Africa,

> *High prices are due more to policy uncertainty and structural problems that keep transportation, handling, and port clearance costs unnecessarily high, than to excessive margins...The measures needed to make inputs more affordable to farmers include building institutions to promote*

competition while improving supply chain efficiency, investing in transportation and market infrastructure, investing in research and extension, managing price and production risk, facilitating rural finance, and strengthening legal and regulatory institutions. Improvements in each of these areas will contribute to improved profitability of fertilizer use by reducing input costs, raising or stabilizing producer prices, and improving fertilizer use efficiency.

The appropriate policy response to high input costs is to make markets work better, rather than award costly input subsidies.

In many African countries the transition to liberalized input markets has seen fertilizer use fall as commercial distribution systems compete with subsidized government programs (e.g., see Crawford, et al., 2003). Kenya is an exception. Fertilizer use almost doubled from the 1980s to recent years, and much of the increase was on small farms. The key to Kenya's success in this regard has been a tremendous increase in private investment in fertilizer importation and retailing. The average distance a farmer needs to travel to get fertilizer has fallen from more than 8 km in 1997 to just over 4 km in 2004. Wholesalers and dealers have cut the cost of domestic marketing from US$245 to US$140 a ton.

Ariga and Jayne (2006) argue that sustaining this momentum will require a pro-active role for government: rehabilitating the rail system and port facilities, and supporting the integrity of market institutions and arrangements designed to promote input credit and output market access for small farmers.

Crawford, et al. (2003), after reviewing the experience of a number of countries, conclude that market liberalization, when implemented properly, has enabled the private sector to serve agriculture more effectively, but progress has been concentrated in high agricultural potential areas. Farmers have benefited from greater availability and lower prices of inputs. However, access remains a problem for poor farmers with limited availability of cash to invest in crop production, and access to markets and financial services has not improved for farmers in remote areas. In areas where inputs could be used profitably but traders lack the incentives to create markets, programs may be needed to create incentives to pull private-sector actors into the market. Kelly et al. (2003) describe public-private partnerships that can be effective at achieving this. NGOs and extension can provide poor farmers with ways to make more effective use of small quantities of inputs, as well.

In many other cases private incentives to invest in markets are limited because of lack of public infrastructure (roads, communications); weak contract enforcement, laws and regulations; small and declining farm sizes; or productivity constrained by lack of research and development, extension, well functioning factor markets and human capital. In these cases, public investments clearly are a prerequisite for market development.

When thinking about public-sector policies to alleviate rural poverty via market development, it is important to keep in mind that resources are always scarce, every program has significant opportunity costs, and thus the key policy challenge is to use public resources as efficiently as possible to achieve desired rural poverty outcomes.

Case Studies from NGOs and Private Enterprises

Many initiatives sponsored by NGOs and private enterprises have focused on integrating small farmers into high-value market chains, often oriented towards export markets. If one adds up the number of poor farmers who have benefited directly from these projects, it is small. Most of the world's poor farmers either consume their production at home or, if they produce a surplus, market it in traditional chains. (The multiplier effects of these projects can be significant, however.) There needs to be a new emphasis in development policies and projects on strengthening the position of poor farmers within traditional chains, as well as continuing efforts to bring them into high-value chains.

Nevertheless, it is useful to draw out the lessons from value-chain projects, for two reasons. First, the impact of these projects can go far beyond the numbers of farmers involved in them, because of the growth linkages that higher farmer incomes create in rural economies. Second, many of the obstacles that these projects confront are similar to those that must be confronted in order to enhance farmers' position in existing chains, and in the case of those who do not have access to markets, to gain market access.

Below we examine a selection of case studies illustrating ways in which NGOs and private enterprises have attempted to address the nine sub-challenges outlined in Part II.

Empowering Small Farmers by Association (Challenges 1, 3 and 7)

There is a high correlation between farm size and access to input and output markets. It is much more efficient for traders, supermarkets or exporters to buy from a few large farmers than from many small ones. It is considerably more expensive and risky for a bank to make loans to many small farmers rather than to a single large one. Large farms are able to reap all kinds of economies of scale, from lower transaction costs in input and output markets, to securing access to market information and certifying production practices (e.g., for green or organic certification).

Organizing small farmers into producer associations or coops can level the playing field and empower farmers in markets. It is also potentially far less costly for a development project to work with a single farmer association than with each of its members.

Nevertheless, there are many challenges to creating sustainable associations. In

order to achieve sustainability, it must be in the interest of each member to keep the group together. It may be that groups whose sole purpose is to organize farmers to carry out activities on a group basis (combining produce into larger lots, negotiating with buyers, placing single large orders for inputs) are the ones most likely to succeed and persist. When the group handles money, as well, there is more leeway for corruption and self-interest of individual members to jeopardize the survival of the group (e.g., embezzlement of assets). Nevertheless, if the group is successful, it may be difficult to expand without taking on more financial functions.

Shepherd (2007, p. 47) cites the example of a farmers' group in Uganda that was organized to supply a fast-food restaurant with potatoes for French fries with support from an NGO. The farmers planted a new variety and adjusted their production practices to ensure the right size and moisture content required by the restaurant. They had to work as a group, staggering their planting, in order to insure a steady supply year round. The restaurant paid by check, requiring the coop to open a bank account. A visit by the restaurant manager to the village proved to be an important catalyst in the development of this new market chain for small potato farmers.

The Malawi National Smallholder Farmers Association (NASFAM) supports the creation and operation of "farm clubs" to improve access to profitable farming opportunities. It was formed in 1997, and by 2004 it had more than 100,000 members in 5,000 clubs, representing nearly 5% of farming households in Malawi. The local clubs with 10 to 20 members are organized into associations, and NASFAM subsidiaries provide commercial and development support services to associations, clubs and members. Its success turns on a number of key factors, including: focusing on motivated farmers and good business opportunities; market and client research before launching new activities; concentrating on developing linkages with a range of service providers rather than trying to provide too many services itself; and a core focus on developing market linkages, technical support, capacity building (literacy and management training) and governance (with standard membership rules and structures and financial management and auditing services). The clubs, associations and NASFAM constitutions provide overall membership control but also considerable independence to professional managers and commercially experienced leaders (Chirwa, et al., 2005).

A successful farmer association does not guarantee that poor farmers will benefit, however. The strength of the group depends upon the resources that each member brings into it, including know-how as well as other assets. This puts asset-poor farmers at an immediate disadvantage.

In Guatemala, a coffee coop of small farmers succeeded in obtaining significantly higher prices than those enjoyed by non-members. Nevertheless, there were barriers to membership in the coop for the poorest coffee farmers, for a number of reasons. First, members had to transport their harvest to the coop, and the poorest farmers could not afford the delivery costs. Local traders pick up the coffee beans at the farm. Second, the coop turned over its coffee to the exporter in January but did not receive payment until mid-May. Payment from local traders was immediate. Third, the poorest farmers were less educated and often non-Spanish speaking, and both of these traits were found to

discourage coop membership (Morgan, 2008). Because of these problems, poor farmers were significantly less likely to participate in the coop. Instead, they sold their coffee to local traders at relatively low prices. Enabling poor farmers to obtain the benefits of coop membership would require interventions on multiple fronts, including education (Spanish language and literacy campaigns), transportation access to the coop, and quicker payment and/or access to credit to alleviate liquidity constraints. This is a classic case of failures in one market (capital) preventing poor farmers from benefiting in another (group coffee sales).

Market Empowerment and Value Chains (Sub-challenges 1, 2, 3 and 7)

Most farmers are part of low-value market chains. If they sell, it is usually in a spot market or to a small number of intermediaries who buy at harvest time, when other farmers are bringing in their harvests and prices are low. They lack information about prices at the other end of the supply chain. Without access to transportation at competitive prices and good market information, they lack bargaining power and have no choice but to sell low. In this scenario, there is little incentive for farmers to invest in more productive technologies or improve product quality. There is also little incentive for intermediaries to enter into higher-priced contracts with farmers. Most of the benefits accrue further down the supply chain, to the intermediaries or end buyers.

Producer associations can enable small farmers to gain access to high-value supply chains. They can negotiate deals with buyers, like exporters, supermarkets or hotels, providing them with something that they are willing to pay a premium for: high product quality and reliable supplies. They also can help their members gain access to needed inputs on more favorable terms, information about markets and production technologies, and credit.

More often than not, though, bringing small farmers into high-value chains requires more than a producer association.

Farmers cannot benefit from increasing the harvest or raising the quality of their products if there is not a private-sector actor ahead of them in the supply chain who is willing to pay a "good" price for their produce. Situations abound in which a food processor buys mediocre quality produce from farmers in local "spot" markets or via intermediaries who buy cheaply when the produce is abundant. In such a setting, farmgate prices tend to be low and variable, farm families' livelihoods are precarious, and there is little incentive for farmers to invest in raising productivity and quality. The processor, in turn, finds itself in a different part of the same low-value chain, unable to obtain high prices and secure contracts for its processed fruits or vegetables from the buyers at the other end of the chain. In this low-value chain equilibrium there is no incentive for the end buyer to offer higher prices to the processor, or the processor to the farmer.

There are many examples of development projects that have tried to increase

farmers' share of the benefits in low-value chains. An example is the creation of a farmers' cooperative that sells directly to the processor, or perhaps tries to augment the farmers' market by identifying new buyers. Sometimes these projects are successful, at least temporarily, but rarely are they sustainable, because they do not address the basic problem, which is that the farmers remain part of low-value chains. After the development experts depart, the farmers' cooperative and its members remain the weak link in this chain.

Why would the processor in this example be willing to enter into high-price contracts to buy these farmers' produce? In a low-value market equilibrium it would not. The higher contract price to farmers would squeeze the processor's profits, which in turn are squeezed by low prices in the markets where it sells. There is no incentive for the end buyer to pay the processor a higher price. Why, then, would it ever be in the interest of a buyer to enter into a contract with a seller, guaranteeing a high price for her produce or processed food? Indeed, if such contracts are attempted in a low-chain equilibrium market, it is unlikely that the sellers will be able to come up with a reliable supply of high-quality products to comply with the terms of the contract. New investments and incentives are needed all along the supply chain.

The answer lies in moving from a low-value-chain equilibrium to a high-value one. If the processor can guarantee a dependable source of high-quality processed fruit, it is likely to find a buyer willing to offer a price premium. This is exactly what the Wal-Marts and exporters of the world are looking for, and it holds promise in traditional markets, as well. The processor can use part of this price premium to reward farmers for providing a more reliable and higher-quality supply of produce. This can raise the farmers' incomes and create both the incentives and the cash to invest in higher productivity and quality on the farm. The two most critical ingredients in high-value supply chains are product quality and dependability of supply.

Even though the high-value chain buyers prefer to buy from fewer, large suppliers, there are numerous cases in which small farmers benefit by moving into high-value chains. The key to their success lies in each individual farmers' ability to supply a reliable (albeit small) volume of high-quality product, as well as other chain actors' ability to efficiently aggregate this product up to the scale demanded by the supermarket, exporter, or final processor.

An innovative practice in Sri Lanka has brought many small farmers working on less than one hectare of land into a high-value spice chain.[7] The cornerstone private-sector actor in the chain is MA'S Tropical Food Company. It has assisted small farmers in organizing themselves, trained extension agents to help small farmers, paid price premiums to farmers based on quality standards, centralized its procurement system to make it cheaper and easier for small farmers to sell their products, and streamlined its logistics and inspection. All of these measures involve costs for the company, but the returns outweigh the costs.

[7] For this and other examples of innovative practices visit the Regoverning Markets website at www.regoverningmarkets.org.

With higher prices, better organization, and information and training, farmers are able to produce a more steady supply of higher-quality spice. That is, the value at the farmer-end of the supply chain is higher. With access to a more steady supply of quality spices, the company can fetch a price premium in its markets. The result has been higher income, more trade, and more rapid product turnover for the company. There are day-to-day challenges in keeping the chain going. However, incentives now exist up and down the chain to keep it together and invest in making it better. It is a high-value chain equilibrium.

The key to this and most other successful projects is the ability of one or two key private sector actors to organize small producers and turn a low-value chain into a higher-value one. This clearly requires the participation and organization of actors all along the chain, including the small farmers. Creating a farmers' organization is a necessary step, but it is not sufficient. Coordinated efforts all along the chain are required. This, in turn, requires a great deal of effort and originality on the part of farmers and other key players in the chain as well as by those providing assistance to them. It is precisely because of this that most poor farmers continue to find themselves in a low-value chain equilibrium.

Finding Investment "Hot Spots" (Sub-challenges 1, 2, 3, 5 and 7)

When a key link in a potentially high-value supply chain is missing it has to be created. Private capital can team up with targeted development assistance to do this. The experience of Ghana's Tongu Gold Farm, Ltd. (TGF) illustrates both the promise and challenges in building high-value chains for pro-poor agricultural development.[8] It was the outgrowth of a development project aimed at bringing pineapple farmers into a value chain. Creating this value chain required linking local producers with European markets. The market research and networking required to do this are similar to what any private business would have to do. However, a key player in the chain was missing: a slicing facility to process pineapples not of sufficiently high quality to export as fresh fruit. A small slicery was built with private capital and provided immediate employment for 40 people, mostly women. The original plan was to make good contracts with local farmers to supply the slicery. Once the facility was in operation it became clear that TGF could not rely on supplies from local farmers while ensuring a secure supply to its customers in Europe. It then started its own pineapple farm with partial support from the Dutch Ministry of Economic Affairs.

TGF did not abandon the idea of bringing local farmers into the supply chain, and the multiple stages involved in producing pineapples created an opportunity to do this. It started an in-vitro laboratory producing more than three million plantlets—a venture clearly outside the scope of what a poor farmer or farmers' association could do. It then initiated its own shoot farm, to grow the plantlets out and harvest the shoots to be planted on the pineapple farm. Its goal was eventually to outsource the shoot farming to local

[8] This and the following two projects are described in detail in KIT, Faida MaLi and IIRR' (2006) excellent excellent book, *Chain Empowerment: Supporting African Farmers to Develop Markets*. Only a brief summary of the projects and their lessons with respect to markets is given here.

farmers. Before this could be done, though, the prospective outgrowers had to pass through an extensive training program on the TGF shoot farm. This provided them with not only the human capital (skills, know-how, basic literacy) they would need but also a secure source of income as part-time employees on the TGF farm. Once they pass through the training program, TGF provides each outgrower with one acre of plowed land and sells them the shoots and other inputs they need on credit, guaranteeing a price that will cover all of the costs. After deducting these costs, TGF pays 50% of the profits from the shoots to the farmer. The other 50% is put into a savings account, which the outgrowers can access after three years to start their own farms or for other purposes. TGF guarantees to buy the outgrowers' shoots if they decide to start their own farms.

This project has many characteristics of a private business that are critical to its economic success: securing high-value product markets and buyers, investing in critical links along the chain, outsourcing, and provision of credit to outgrowers. However, it also includes activities that go far beyond what most businesses would imagine doing, including training outgrowers, providing outgrowers with a steady source of income as workers on the TGF farm, and establishing savings accounts. In TGF's long-term development plan, these measures enable stakeholders to overcome risk and liquidity obstacles to eventually entering the chain. Along the way, TGF assumes roles traditionally played not only by private enterprises but also by governments, including investing in its own electricity generation and road improvements.

The success of TGF lies in understanding the multiple sub-challenges confronting local farmers, including the constraints they face with respect to information about market opportunities, access to high-value markets, technology and know-how, inputs, credit, and risk. It almost certainly would have failed if it had ignored any one of these context-specific elements—and without the energy of a committed entrepreneur and foreign aid at critical junctures along the way. Its success also depended on the commitment of the farmers, themselves, to take concrete steps to improve their livelihoods. This project goes beyond most traditional development models, in many ways blurring the lines between a development project and private enterprise.

Private-Sector Initiatives Integrating Training, Credit and Marketing (1, 2, 3, 7)

There are many examples of small farmers being unable to exploit new market opportunities because they lack access to both know-how (human capital assets) and credit. In South Africa, a supermarket has enhanced its market position by offering fresher produce than its competitors. It does this by providing a market for local farmers' produce and providing farmers with interest-free production loans upon presentation and approval of business plans. Repayment of the loans is deducted from payments to farmers at the time their crops are delivered to the supermarket. The supermarket staff also make frequent visits to farms and provide training in product quality standards. This private-sector initiative targets complementary assets (skills), complementary markets (credit), and linking of local farmers to high-value markets, all three of which are required for the farmers' and retailer's success. (Cited in Shepherd, p. 48.)

Another private-sector initiative organized 100 female farmers in a poor region of Bali to supply fresh produce to the hotel, restaurant and supermarket sectors and also for export. The Bali Fresh company rented land for the women and for a company farm to supply them with seedlings, provides extension and marketing support to ensure consistent quality and quantity, and with the help of outside aid, set up a revolving fund to purchase inputs and literacy and bookkeeping courses. Female farmers in this program now earn more than twice the minimum wage. This project is notable for having brought women in a poor zone and with little or no farming experience into a relatively high-value supply chain. (Cited in Shepherd, p. 46.)

Making Projects Market Driven: Jatropha Herbal Soap in Tanzania (Sub-challenges 2, 7)

A traditional "project approach" (KIT, et al., 2006) entails such measures as identifying a promising product, providing individuals with inputs and training, and identifying markets on which products might be sold. Often this is not enough. There are many examples of projects languishing or completely folding once the development experts walk away. In most, the stakeholders are left on their own too soon and have little chance to establish themselves as part of sustainable, high-value supply chains.

In Tanzania, more than a dozen groups of women became involved in the production of jatropha soap after a project provided them with seeds, seedlings and cuttings; offered them technical assistance and extension on how to grow them, and training on processing the plant's seeds to make oil and soap (KIT, et al., 2006). Although many families have benefited from this project, fewer participate in this production now than when the project ended in 2004, and those who do see jatropha as an income supplement rather than a livelihood. Only a few continue selling soap, all in local markets. Most have fallen back to their original position of selling seeds or oil to a single soap processing company.

The key to making a project like this flourish is integrating the jatropha producers and the processing company into a high-value market chain. A feasibility study is needed to identify possible upgrading strategies, with respect to the product, the process by which the product is created, and the functions of different actors in the value chain. Ensuring uniformity and quality almost certainly will require that soap processing be centralized. However, stakeholders need to be included in the business planning. A development consulting firm, Match Maker Associated, Ltd., issued a list of recommendations related to standardization, packaging and labeling, diversification of soap lines, quality control, activity locations, creating export markets, and the functions of both the processor and women's groups required to make this happens. The jatropha story highlights the role of markets in successful development projects. To succeed, the value chain development will have to be led by the private sector; projects that rely on donor funding are not sustainable in the long run. Nevertheless, the role of support organizations as facilitators along the way can be critical.

Inserting New Links into the Value Chain: Cashews in Mozambique (Sub-challenges 1, 2, 4, 7)

Cashews are the largest nut crop in the world. Farmers in Mozambique, the leading producer of cashews, traditionally have been part of a very short supply chain. Raw nuts are sold to traders who then export them for processing. Farmers could get a much higher price by selling to local processors or by processing the nuts themselves.

A major project, supported by SNV, is trying to insert new links into the value chain in Mozambique by helping people start small-scale village processing plants, while increasing both the quantity and quality of cashew nut production on small farms. The plants sell to factories for further grading, packaging and export to Europe. This project is having success at creating relatively high-paying processing jobs for local people, with monthly wages almost as high as the average annual per-capita income in the area. It has enabled more than 1,000 farmers, mostly women, to plant improved cashew trees and has provided training in cashew production and processing. As the reliable supply of high-quality of cashews leaving the village processing plants improves, so do prices.

The key to success begins with markets, in this case, supplying processed cashews to the exporting factories. Securing and keeping this market, in turn, requires making sure that the village processors can provide a reliable supply of high-quality nuts. The village processing link in the value chain was the critical—and most novel—entry point for the project. However, successful processing requires having a reliable supply of high-quality raw nuts from farmers. Moving back the value chain, the project provided the farmers, mostly women, with the inputs and know-how they needed to accomplish this. By becoming actors in a high-value chain, the farmers have become more productive, have improved the quality of their orchards and nuts, have learned how to cooperate with either other and with the village processors, and as a result, enjoy far higher incomes than before.

> *The most successful development projects do not simply try to increase small farmers' share of benefits in an existing supply chain, but rather, find new and creative ways for farmers to create value in the market.*

The positive impacts of this and other successful value-chain projects go beyond the families involved in growing and processing cashews. Higher incomes for farmers and processing workers are spent locally, creating new demand and incomes for local businesses and workers in other activities.

There are many other examples of how markets can be creatively exploited to enable poor households to enter value chains and improve their livelihoods. Some involve only agricultural activities. For example, the Dutch-owned company Cheetah Malawi Ltd. provides a package of services to farmers through "paprika clubs," a type of producer association. The services include seed and extension to ensure the quality and

quantity of paprika production, without which the export market would quickly be lost. Buying depots and collection points are placed nearby, and clubs or groups of clubs may deliver their crops jointly, minimizing transaction costs for farmers. Cheeetah now provides farmers with a computer-generated "seller sheet" with information about the farmers' quality, price, deductions, cash advances, and levies, along with training on how to use this information. Because of this innovation, the paprika farmers now have a record of what they sell and are owed, can ask informed questions about their deliveries and payments, and are less likely to be (or feel) cheated by company staff. The company also benefits, with a full tracking and tracing system.

In Peru, an NGO (FOVIDA—Fomento a la Vida) identified a market niche for small potato farmers to supply Frito Lay. The company had cut back on its small potato suppliers because of high monitoring costs, relying instead on large producers and storing potatoes during the off season. Because storage is costly, there was an opportunity for the NGO to organize small farmers and use an intermediary to assume the supervision costs associated with coordination and quality control. Frito Lay bought potatoes under two arrangements: Directly from farmers with cultivated areas of 5 hectares or more, and from small farmers organized under the FOVIDA umbrella. As of 2005, nearly 50% of Frito Lay's potatoes in the region were being supplied via FOVIDA. The contract with Frito Lay, signed 2-3 months prior to planting, guarantees a price substantially higher than in traditional markets. It also stipulates strict quality standards involving dry-material and sugar content. FOVIDA performs tests and quality control to ensure that the farmers adhere to these standards. The company advances seed to supplying farmers, but only to the most qualified. Even with the NGO's efforts, there are challenges bringing the most asset-poor farmers into the market (Escobal, 2005).

Other examples include projects supporting conversion to organic production and targeting the fair-trade market and linking producers and producer associations with alternative markets for their products, for example, biofuels. In the Andes, a combination of relatively strong forms of organization along with external support have generally been critical in opening up small farmers' access to knowledge, credit, irrigation, technical assistance and new markets. In the case of contract farming, the intermediation of commercial actors has also been important (Bebbington, 1997).

Many projects by their nature involve multiple input and output markets, including linked nonagricultural markets and vertical integration into high-value supply chains, as exemplified by the TGF pineapple and jatropha cases described above. Their success requires understanding and managing linkages among production activities and markets. Development practitioners cannot perform all of the functions required to make most of these projects work. Frequently, it is necessary to partner with private-sector players, designing projects that are beneficial both to them and to the rural stakeholders. The most successful development projects do not simply try to increase the poor's share of benefits in an existing supply chain, but rather, find new and creative ways to help the poor move into higher-value chains.

For an NGO intent on assisting small farmers many lessons have been learned from past projects. Successful initiatives requires a demand- or market-led approach, in

which a market for the farmers' produce is clearly identified. The cashew and potato examples above are good illustrations of market-led projects. To accomplish this, NGO personnel with solid marketing skills are indispensable. Potential markets are not necessarily for export; only a small share of agricultural production is exported, and urban high-value markets offer great potential in many countries. Publicity campaigns to increase consumption of fresh fruits, vegetables and animal products can be effective in bolstering demand. Niche marketing, whether for specialized varieties (e.g., blue native maize) or to supply markets in specific seasons when supplies are not available from other sources. Group formation (e.g., creation of farmers' associations) is generally considered to be an important ingredient to enabling small farmers to have access to new and better markets; however, it is not sufficient. In almost no situation is it helpful for the assistance provider, whether NGO or government, to provide marketing or other services. When they do, the market chain is likely to be unsustainable, with little likelihood of surviving once the external assistance ends. The involvement of participating farmers in all aspects of contract negotiations and chain formation is crucial.

The need for coordinated actions up and down the market chain has important implications for project evaluation. An increasingly popular subject of economic research is the evaluation of the impacts of specific interventions, like giving poor households access to loans. However, if the productive use of credit requires also having access to complementary markets and assets, the success of these focused interventions is likely to be limited. Both development projects and efforts to evaluate their impacts should take on a broader, market-chain perspective.

Increasing Poor Farmers' Benefits in Traditional Chains

For most poor farmers, the greatest hope for overcoming poverty lies in accessing traditional market chains on better terms, either as agricultural producers or workers. While many projects have focused on moving small farmers into high-value chains, fewer have focused on poor farmers in traditional chains. Many of the same measures identified above apply to efforts to strengthen poor farmers' position within traditional markets, including public and private investments to provide access to cheaper inputs and higher output prices, information, education and extension to improve productivity, and coordination of efforts via the formation of producer associations.

There is also considerable scope for expanding traditional markets for food that can be produced by small farmers. In Ethiopia, the government fully liberalized the grain market in March 1990, lifting all restrictions on private inter-regional trade flows, removing official pricing and quotas, and eliminating the monopoly status of the marketing board. Nevertheless, only 28 percent of total cereals production reaches the market and only 18 percent passes through the marketing chain. This suggests that there is considerable scope for expanding the volume of the grain market.

The obstacles to expanding the grain market are particularly severe for the poor. A study of grain markets in Ethiopia by Gabre-Madhin (2001) found that private sector

trade was constrained by weak public market information, the lack of a transparent system of grades and standards for grain, the use of verbal, non-standardized contracts, and weak legal enforcement of contracts. Confronted by these problems, private traders either exchange with partners they know well or engage brokers who act as agents on their behalf. Poor farmers tend to be excluded from these arrangements. Development efforts to raise incomes of poor farmers in traditional markets need to focus specifically on these constraints.

Linkages are critical within traditional as well as modern market chains. Garoua, a Northern Cameroon town with an estimated population of 230,000 inhabitants, has more than 1600 small and micro commercial agri-food enterprises, one for every 23 urban households. Their food processing and catering activities are decentralized and labor-intensive and are increasingly important income earners for the poor. They are also among the most important economic activities for women: A survey found that women ran 82% of the activities in Garoua food micro-enterprises (Sautier, et al., 2006). Connecting poor farm households with traditional food processing activities, as suppliers or as workers, can be an important element in rural poverty programs.

Upgrading Agricultural Labor Markets

Where poor rural households do not become part of high-value supply chains directly, wage work, even in seasonal agricultural jobs, can complement other income sources and enable people to go on living in rural communities while working on nearby commercial farms. Wage work on high-value export fruit farms has become a vital source of seasonal labor for households in rural Chile. So has linked seasonal employment in packing sheds, particularly for women (Jarvis and Vera-Toscano, 2004).

Agricultural wage work does not necessarily lead to sustainable livelihoods when wages are very low and health hazards high, for example, as a result of agrochemical use. There is clearly a role for both governments and development practitioners in pushing for greater workplace security and control of health hazards, organization, skills training, and other measures to enhance the contribution of farm employment to economic livelihoods in poor households. In casual agricultural labor markets, workers expend energy and time drifting from farm to farm seeking jobs. This can create serious inefficiencies in agricultural labor markets and result in a high ratio of workers to jobs and low farmworker earnings. This problem is not limited to poor countries. In the United States, more than half of all farmworker families live below the poverty line with unstable work.

Better labor management can improve opportunities for poor households to improve their livelihoods through agricultural wage work. Rather than hiring large numbers of short-term workers, farmers could enter into contracts with crews of workers who move from farm to farm. The agricultural labor market chain could be upgraded in a manner similar to agricultural product chains. Farmers may be willing to pay a premium for crews of experienced workers and the peace of mind that their crops will be picked at the right time and in the right way.

Non-Agricultural Solutions to Rural Poverty

As we saw in the Background Paper for Chapter 1, rural economies in the world are becoming less and less agricultural. As one recent study notes, "The traditional vision of rural economies as purely agricultural is clearly obsolete" (Reardon, Berdegué, Barrett and Stamoulis, 2007).

In an economy where poor rural households get a small share of their income from agricultural production or by supplying wage labor to farms, agriculture may be a way out of poverty for some, but helping households improve their earnings from nonagricultural product and labor markets needs to be part of the rural poverty agenda.

Some rural households may be able to exit poverty via self-employed nonagricultural production. A number of studies have uncovered high barriers of entry into nonfarm production activities, especially for poor households, despite high returns to such investments (de Mel, et al., 2007). The rural poor have a hard time overcoming entry barriers into nonfarm activities. Because of this, a recent study concluded, "The nonfarm employment and microenterprise programs now en vogue will not necessarily resolve rural income inequality problems and attendant social tensions nor automatically benefit the poor." The main determinants of unequal access to nonfarm activities are the distribution of capacity to make investments in nonfarm assets and the relative scarcity of low capital-entry barrier activities. Therefore, it is crucial for public investments and policy to favor an increase in the poor's access to assets that allow them to overcome nonfarm employment entry barriers. One can not address rural nonfarm poverty without also addressing farm-side problems, and vice versa, because many nonfarm activities are linked to crop production, either directly (food processing) or indirectly (supplying nonfarm goods and services to farm households, e.g., construction; see Reardon, Taylor, et al., 2000).

Far more often, the key nonfarm strategy to exit from poverty is via the labor market. If rural families have good access to expanding nonfarm employment in nearby towns, they can continue living in their villages. Their paychecks can also create income growth linkages that benefit other village households. As a result, a dollar earned in town can contribute more than a dollar of new income to the rural community. Poor households thus can benefit not only directly, by getting jobs in town, but also indirectly, from the increased village demand stimulated by nonfarm wages. In developed countries, few rural communities live solely from agricultural production, and nonfarm work typically is an important source of rural livelihoods.

There are three keys to enhancing poor rural households' access to nonfarm jobs: creating a fertile environment for the growth of nonfarm jobs accessible to rural households; investing in the infrastructure needed to connect rural people to employment opportunities in town; and helping poor households get access to the assets required to take advantage of these opportunities, particularly education and skills.

Migration: A Rural Poverty Solution?

When it is not feasible to hold down a job in town while living in the countryside, rural households can be linked to expanding urban employment via migration. People who migrate from rural areas to urban jobs frequently maintain close ties with their households and communities of origin. Numerous studies document the importance of migrant labor markets and the income migrants send home, or remit, to rural households. If poor rural households are successful at placing family migrants in urban jobs, the remittances the migrants send home can be a powerful tool to combat rural poverty and provide income security. In Mexico's poor southern states, a 10% increase in remittances from internal migrants was found to reduce rural poverty by between one half and two thirds of a percentage point. Here, as in the case of local wage work, access to schooling is critical. The economic returns to education through remittances have been found to exceed 10% per year of schooling (Taylor, 1987).

Overall, studies show conflicting findings about how international migrant remittances affect income inequality and poverty in migrant-sending areas. Some find that inequality goes up and poverty decreases when remittances flow in, and others find the opposite, that remittances are income equalizers.[9] There may be a simple explanation for this disagreement among researchers.

International migration is costly and risky; thus, the "pioneer" migrants come from households that can afford the costs and risks of international migration. These migrants send remittances primarily to households at the upper-middle of the income distribution. This increases income inequality directly, and it has little effect on poverty. However, over time, as more and more households (including poorer ones) gain access to international migration networks, the effect of remittances becomes less unequalizing. If the poorest households eventually gain access to international migrant networks, remittances can become income-equalizers and reduce poverty. Taylor, et al. (2008) found that remittances from international migrants had little effect on poverty in regions where only a few households had migrants (because most of the "pioneer migrant" households are not poor). However, in high-migration regions, increases in international remittances reduced poverty significantly. It appears that even poor households gained access to foreign migration opportunities in regions where international migration has really taken off.

Migrant remittances, like local wages, can create incomes for other rural households. Through their market interactions, migrant households transmit the impacts of migration to others. Non-migrant households can be affected by migration through their interactions with migrant households—or with households that interact with migrant households. Because of this, a household does not necessarily have to have a migrant in order to be affected by migration. In fact, it is possible that most of migration's impacts

[9] For example, Barham and Boucher (1998), Oberai and Singh (1980), Knowles and Anker (1981), Adams (1989), and Adams and Alderman (1992)

on sending economies, especially on the rural poor, are found outside of the households that send the migrants and receive the remittances. For example, if a migrant household uses remittances to finance a new project in the village, it may demand labor from another village household. If the migrant-sending household had not participated in migration, it might not have invested in the project, and the other household might not have had a market for its labor. Investing may not be limited to the migrant household if there is a local credit market (formal or informal) to channel savings among households: a household that did not have a migrant could borrow from a household that did.

Recent findings suggest that these indirect linkage effects of remittances are large relative to the direct contributions of remittances to migrant-sending household incomes. As a result, even if high-paying international migration is not an option for the poorest rural households, the effects of migrant remittances in rural economies may still be pro-poor.

For internal and especially international migrants, sending money home is not a simple matter. Western Union, Moneygram, and other agencies have amassed a fortune by charging migrants high fees for wiring remittances. It has been estimated that transaction costs constitute up to 15-20% of the total value of remittances in some cases. The alternative of sending cash, even with friends and relatives, can be prohibitively risky. High transaction costs limit the amount of foreign earnings available for development at home.

Facilitating relationships between banks at home and at migrant destinations is a critical first step towards reducing high transaction costs of remitting. So is improving both rural households' (and migrants') access to banks. Financial markets thus are important not only for agricultural production but also to enhance the contributions that migrants can make to rural incomes.

Remittances also can be leveraged in ways that improve welfare and stimulate investments in migration source areas. Leveraging remittances means seeking ways to multiply the amount of funds available to invest. This can be done on two levels.

First, *individuals* can obtain credit for small-scale production (and other) activities, using remittances as collateral. Given well-documented imperfections in LDC credit markets, particularly in rural areas, micro-credit programs increasingly are a focus of policies to harness remittances for investments at home. Some, modeled on the Grameen Bank, focus on women.[10] If most migrants are men, there is an additional incentive to target micro-credit initiatives at women.

[10] In 1976, Muhammed Yunus founded the Grameen Bank to make loans to poor Bangladeshis. Since then the Grameen Bank has issued more than $3 billion in loans to approximately 2.4 million borrowers. To ensure repayment, the bank uses a system of "solidarity groups". These small informal groups apply together for loans and its members act as co-guarantors of repayment and support one another's efforts at economic self-advancement. See http://en.wikipedia.org/wiki/Muhammad_Yunus.

Second, groups of individuals can organize and seek remittance matches for larger development projects. Under Mexico's *tres por uno* program, migrant home-town associations in the United States team up with villagers to propose community development projects. For every dollar that the migrant association puts up, the federal, state, and (sometimes) municipal governments each supply an additional dollar. This triples or quadruples the funding made available by remittances for civic projects. It also promotes community-based development and creates an incentive for migrants abroad to contribute more income to their communities at home. Such programs have supported a wide range of small infrastructure projects including water and sanitation, road pavement, rural electrification, micro-enterprises and small and medium enterprise development. The benefits of public-sector matching programs generally are limited to the communities that have a critical mass of emigrants who can form an association and generate a sufficient remittance base for projects. One can imagine alternative strategies that might overcome these limitations. For example, "migrant bonds" could be sold to migrants abroad, guaranteeing them a reasonable rate of return while making proceeds available for community-based development projects. Groups of hometown associations may be able to pool resources for projects across more than one community.

Migrant remittances have the biggest potential effect on economic development when they do more than simply hand income to migrant-sending households or communities. The challenge is to create an environment in which income multipliers from remittances and other income can flourish. Remittances and non-farm income create income multipliers within remittance-receiving households when they relax constraints on household purchases of inputs for production activities, adoption of new technologies, capital investments, or income risk. For example, the money a migrant sends home might make it possible to buy both food for the family and fertilizer for a crop, which in turn creates more value when the crop is harvested and sold (or consumed by the family). The remittances might make it possible for the family to grow the crop with a more productive technology such as a higher-yielding seed variety, or to buy inputs for a nonagricultural enterprise.

As with any investment, the farmer has to be convinced that the investment will pay off and be worth the risk. That means having (or being able to obtain) the know-how to efficiently perform the production activity. It means having access to market chains and knowing how to make use of input and output markets effectively. It means understanding that there will be a payoff to the child's education in the future. Nothing will wreck these incentives as quickly as a poor transportation, communication and marketing infrastructure; a lack of access to extension services or to schools; a belief that education cannot offer a way out of poverty; a macro-economic environment riddled with uncertainty; or, of course, a civil war.

IV

Conclusions: Key Success Factors

The tremendous diversity of poor rural households makes it particularly difficult to design policies and programs to make agricultural markets more pro-poor. No one-size-fits-all approach is possible. Nevertheless, a number of key lessons can be gleaned from the responses outlined in Part III.

An overarching theme of this *Rural Poverty Report* is that the empowerment of poor rural men and women and the organizations which represent them is essential for reducing poverty. Access by smallholder farmers to transparent and competitive markets is a fundamental part of any pro-poor growth strategy. This includes access to agricultural markets, but as the nonagricultural component of rural economies grows, it also includes markets for nonagricultural goods and for both farm and nonfarm wage work.

But giving poor households access to a market for their crop is not enough. In order to use markets effectively, the poor also need access to complementary assets and markets. Being able to sell a crop in the market might do little good if a poor farmer cannot afford to buy the needed inputs months prior to the harvest, does not have access to needed inputs, technologies, and know-how, or is too concerned about his family's food security to take production risks.

Both public-sector investments and development projects need to address these problems, helping the rural poor gain access to high-value chains in markets for goods as well as for labor. Policies and regulatory frameworks should aim at building the autonomy, inclusiveness and technical and negotiating capacity of small farmers' and rural producers' organizations; at enabling the rural poor to overcome the challenges they face in securing a livelihood from their production activities; at gaining access to high-paying and stable farm and nonfarm jobs; at exploiting potential synergies between farm and nonfarm activities; and in all these endeavors, at creating spaces for broad social dialogue and coalitions on policy and program formulation and implementation.

The Changing Market Environment

Globalization and market integration are a fact of life that will continue regardless of whether or not the rural poor are prepared for it. The days of heavy government involvement in agricultural input and output markets are past. The WTO and regional trade agreements increasingly handcuff governments' ability to manipulate markets. This is not necessarily a bad thing, because in the past governments frequently intervened in agricultural markets in ways that did not promote income growth or direct the benefits of this growth towards the rural poor. Examples of policy failures abound.

At the same time that the public sector has withdrawn from markets, agricultural supply chains have bifurcated into high-value chains, supplying supermarkets, high-value processing and exports, and traditional chains leading to low-value markets and food processing.

Policies, investments and processes need to be put in place on multiple levels in

order to enable poor rural households to succeed in this evolving market and policy environment. The key to doing this is having access to new market opportunities as well as the complementary assets needed to take advantage of them while at the same time confronting new challenges. The laissez-faire approach of leaving the poor to find their own way in this new world does not offer solutions to rural poverty.

The public sector has key roles to play as a legislator and regulator, to ensure that markets do not discriminate directly against the poor, women, ethnic minorities, or other groups; combating corruption; creating a stable political and macroeconomic environment in which economic activity and trade can flourish; and ensuring the provision of key public goods, including rural transportation, communications, marketing infrastructure, market information, and rural education. These things set the stage for rural development. Without them, private actors must expend inordinate effort trying to overcome the challenges created by policy and market failures, rather than building rural economic prosperity. Those least able to do this are the rural poor. A wealthy household can overcome the challenge of a poor road by purchasing a 4-wheel drive vehicle; of poor communications with a satellite phone; of poor rural education by sending its children to a private school in the city; the development drain of corruption by exerting political influence. A poor household cannot. The private sector can play a positive role in bringing about institutional change via pressure on public-sector actors and public-private partnerships. For example, a private enterprise can enter into a joint venture with government to build a road to a new plant that will provide jobs and a market for local produce, generate power for the plant, and provide the plant with the communications infrastructure it needs to secure inputs and obtain market information.

Even if governments provide these critical public ingredients to development, the conditions of poverty, by their very nature, create an unlevel playing field. Specific policies and programs need to be designed by governments and the private sector to maximize benefits to smallholders from such innovations as vertical integration of domestic or international supply chains for food and the expansion of rural nonfarm opportunities. This can include public-sector measures like requirements to include smallholders in vertical supply chains. The “right” policy or project is context-specific, but the goal should be to enable poor rural households to become part of higher-value market chains, whether for agricultural products, nonagricultural goods and services, or work.

Helping the poor become part of value chains usually cannot be accomplished by focusing on only one link in the chain. Instead, it requires addressing challenges up and down the chain. A small fruit farmer cannot increase the value she creates and takes home from the market unless the trader or processor who buys from her is also part of a higher-value chain. The projects that have been most successful at raising small farmer incomes have involved creating a new equilibrium of interests along the market chain, in which the farmer is a participant. Bringing smallholders together in associations is a necessary step in accomplishing this, but it is not sufficient. Successful efforts to bring small farmers into market-value chains offer promise, both for farmers and for others in the rural economy who benefit, via market demand linkages, when small farmer incomes rise. Nevertheless, it is not clear how scalable value-chain projects are: at present,

linkage projects involving the creation of new market chains reach a small number of the world's farmers, and particularly challenging obstacles confront the poorest farmers. Most agricultural and livestock production goes to domestic markets and passes through traditional market chains. This means that, for most of the world's smallest and poorest farmers, the key to increasing agricultural incomes lies in enabling farmers to access existing market chains on more favorable terms. This, in turn, requires increasing the value farmers contribute to traditional market chains.

As rural economies become less agricultural, nonfarm income becomes increasingly important as an avenue to reduce rural poverty. Policies and projects thus need to focus on not only agriculture but also on improving access to nonfarm incomes. New nonfarm jobs and good roads to get people to these jobs will not bring benefits to a poor rural household that lacks the skills to get the job. Higher incomes in other rural households, whether from crop production, salaries, or migrant remittances, can create new markets for goods and services demanded by these households. However, this will not benefit those who lack the capacity—know-how, capital, willingness to take risks—needed to respond to the new demand.

Addressing all of these challenges requires forging new partnerships between the rural poor, private sector actors in market chains, development agencies, and governments, in ways that are mutually supportive in achieving sustainable income growth and channeling the benefits of this growth to the poor. It also requires that governments and NGOs understand which combinations of interventions work and which do not. One of the highest priorities for development practitioners is to have access (both on the input and output side) to an information exchange or clearing house, in which they can learn from and share experiences in the field.

As the economic and policy landscape changes, so do the ways in which development projects are conceptualized and implemented. The development project that sets up a farmers' cooperative and leaves it to fend for itself in a complex marketplace is a thing of the past. The new rural reality requires a more comprehensive, market-oriented and context-specific approach in which rural stakeholders, private investors and donors actively participate.

Figure 4.1. Markets Affecting Rural Livelihoods

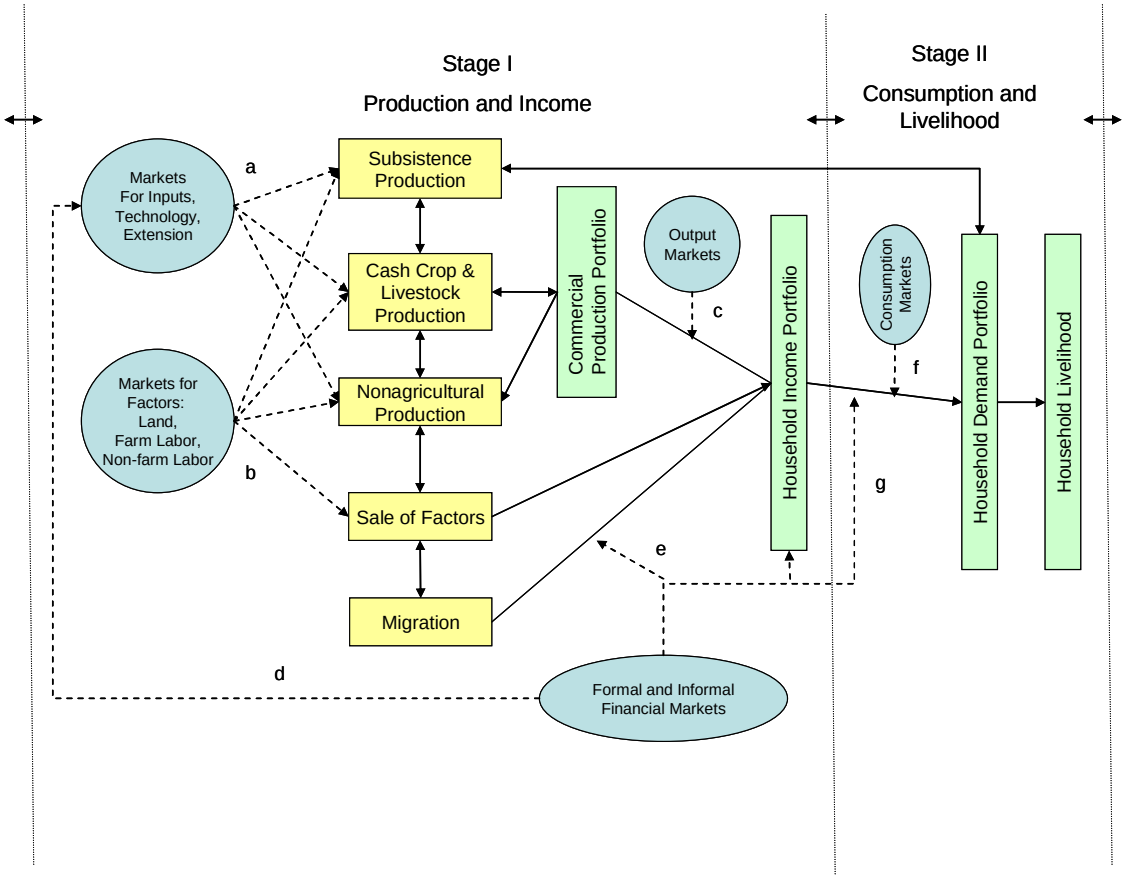


Figure 4.2. Infrastructure Access of the Rural Poor and Non-Poor

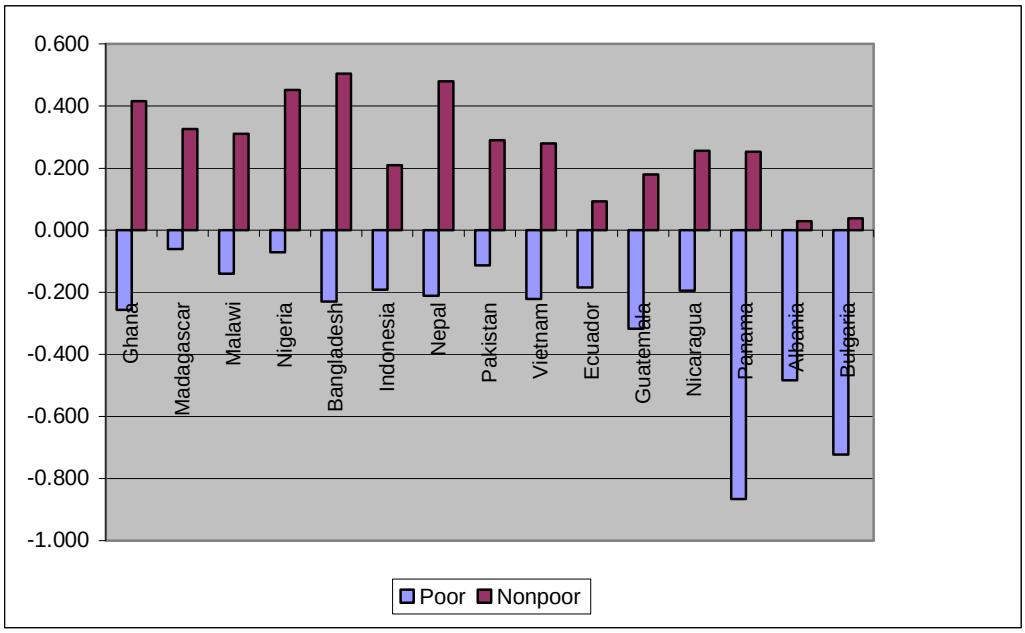
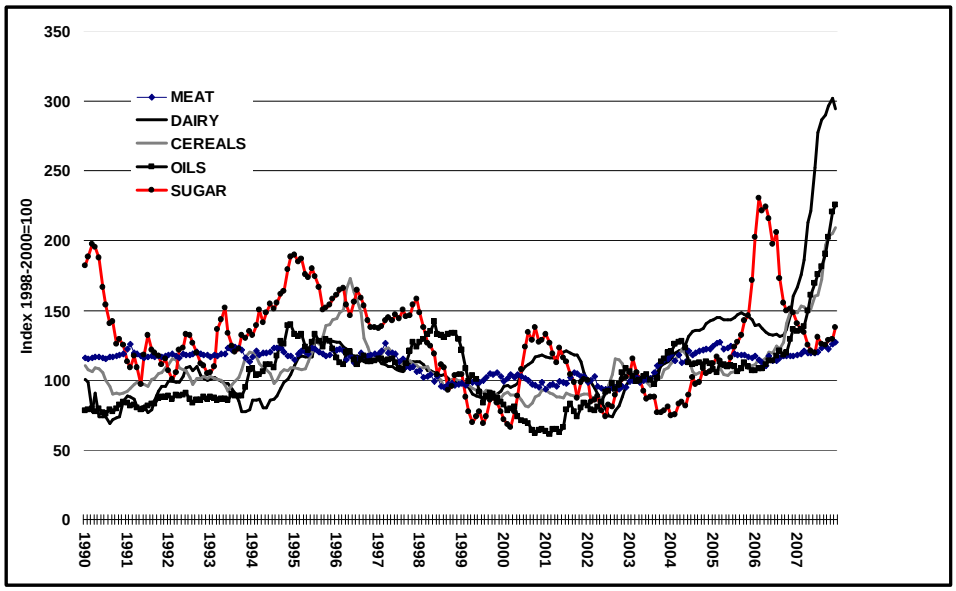
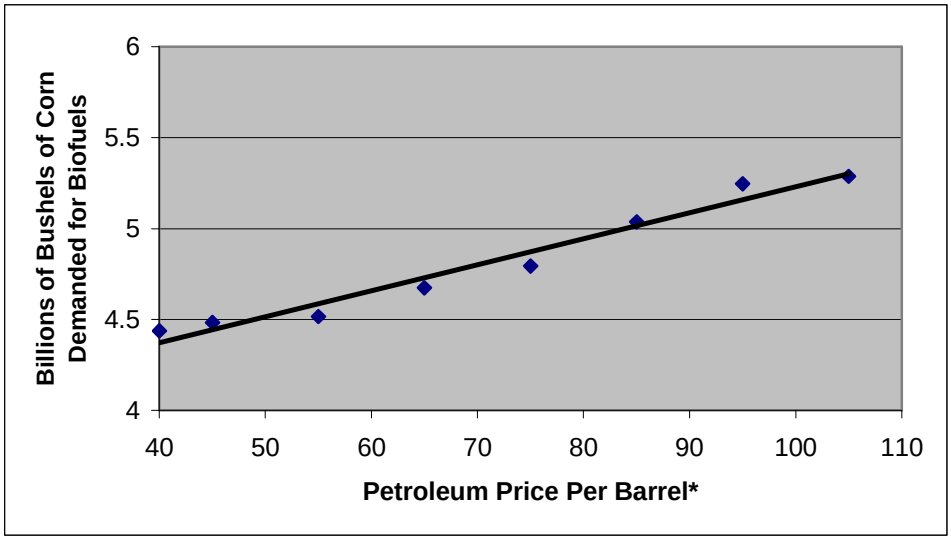


Figure 4.3. FAO Indices of Monthly Prices for basic food commodity groups (1998-2007; 2000=100)



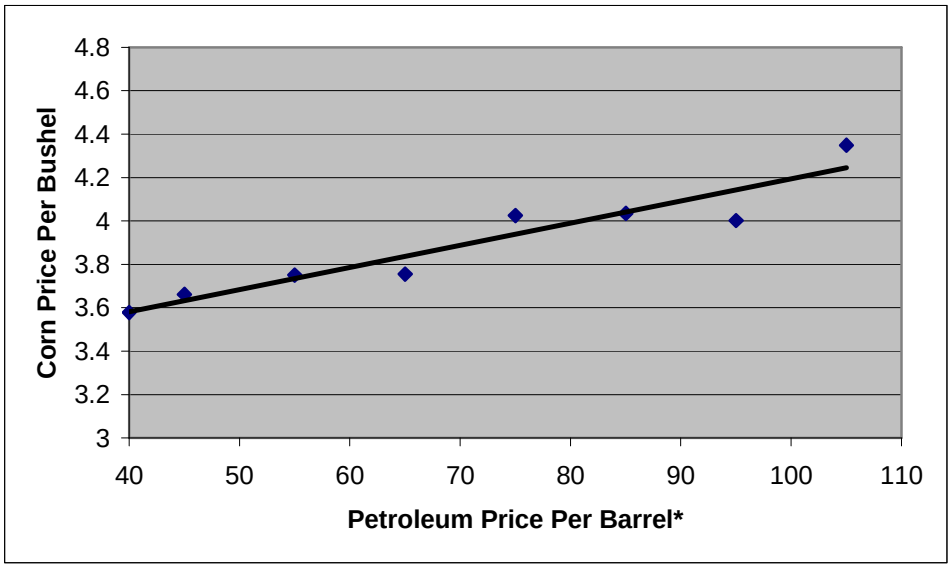
Source: Trade and Markets and Agricultural Development Economics Divisions of the Food and Agricultural Organization of the United Nations.

Figure 4.4. Oil Prices and the Biofuel Demand For Corn



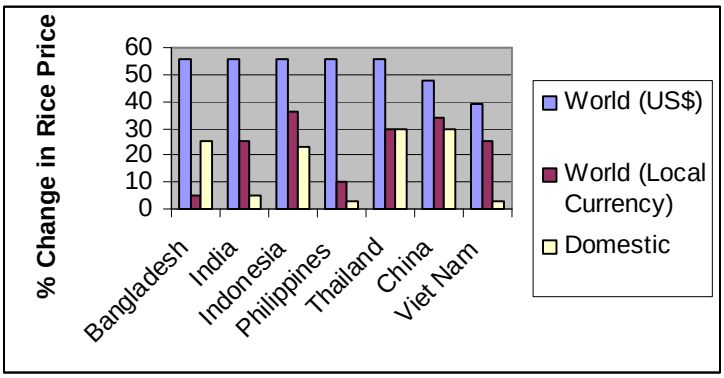
* Oil price is the refiners' acquisition price.

Figure 4.5. Corn Prices and Oil Prices



* Oil price is the refiners' acquisition price.

Figure 4.6. Changes in World Price (US$ and local currencies) and Domestic Prices of Rice in Seven Asian Countries, 2003-2007



Source: Dawe, D. (2008).

Figure 4.7. Rural growth linkages

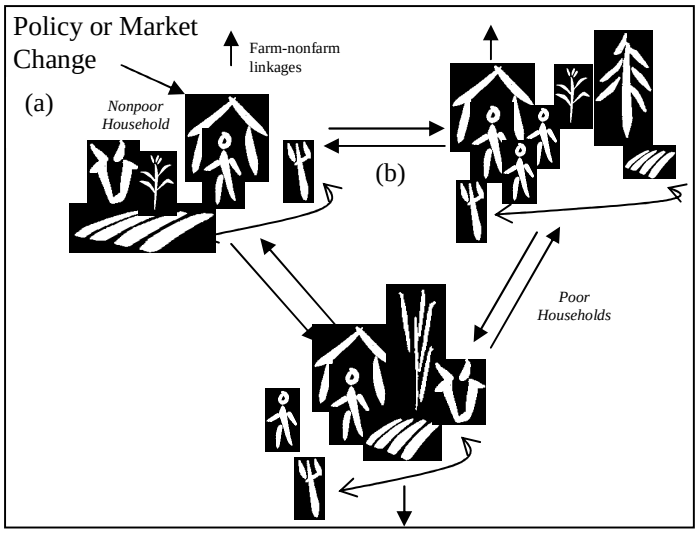
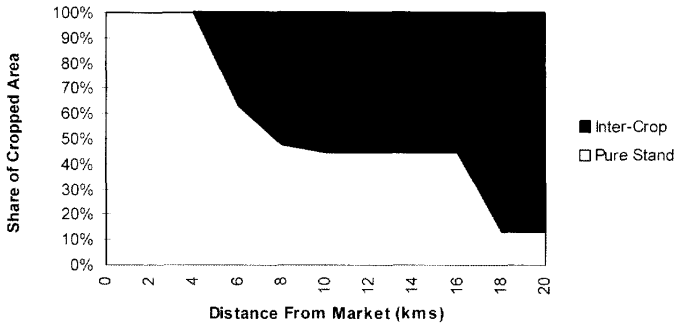


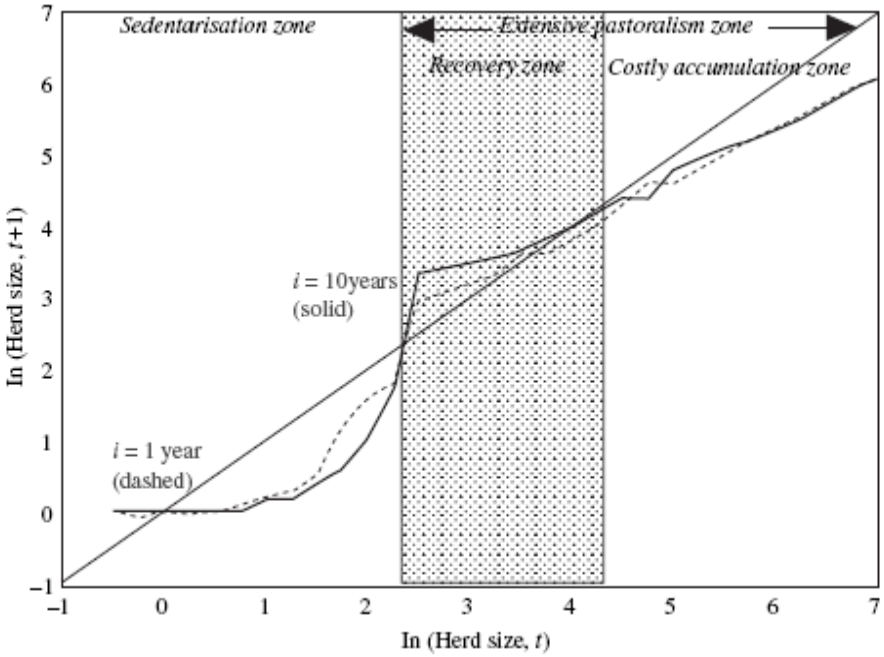
Figure 4.8. Isolation and Diversification

FIGURE 1
CHANGES IN THE OPTIMAL CROPPING PATTERN AS TRADING COSTS INCREASE



Source: Omamo (1998), p. 158.

Figure 4.9. Threshold Herd Sizes and Asset Poverty Trap in a Pastoralist Population of Ethiopia



Nadaraya-Watson estimates using Epanechnikov kernel with bandwidth ($h = 1.5$)

Source: Lybbert, et al. (2004), p. 771.

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