Preliminary Draft

Agricultural Markets and the Rural Poor

David Orden, Maximo Torero and Ashok Gulati

Draft background paper for workshop of the Poverty Reduction Network (POVNET), March 5, 2004. The authors are senior research fellows (*d.orden@cgiar.org* and *m.torero@cgiar.org*) and director (*a.gulati@cgiar.org*), Markets, Trade and Institutions Division, International Food Policy Research Institute, Washington D.C., 20006-1002, USA.

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Executive Summary

This paper examines multiple aspects of the linkages of poor rural households to national and international markets and how to improve these linkages to sustain improved rural livelihoods. Supportive government investments and well-functioning private and public market institutions, together with foresight in the design of agricultural policies, are required to take advantage of market opportunities to sustain increased agricultural output and raise rural incomes.

We highlight two overarching questions faced by policymakers and the research that is needed to address these questions: 1) how can innovative public and private roles to create infrastructure and institutions be enhanced to reduce internal transaction costs and risks and to diversify sources of livelihood to benefit smallholders, and 2) how can multilateral disciplines be strengthened to create international market opportunities. The conceptual framework of the analysis is summarized in the figure "Linking Smallholders to Markets" in the introduction to the paper.

Agricultural production of the most marginalized poor farmers (denoted rural world 3) is primarily for self-consumption. These farmers are living at a subsistence level and lack market access or the physical and human assets to compete successfully in market production. A second group of smallholders (rural world 2) are engaged at least marginally in production for domestic or international markets, or might become so if propitious conditions were created by well-designed policies. A third group of smallholders (rural world 1) are globally-competitive, market-oriented producers of cash crops. The key constraints that need to be addressed to enhance market participation differ among these three groups. But the basic issue is to increasingly integrate smallholder farmers into markets at the domestic local, sub-national and national levels and at the international bilateral, regional and multilateral levels. The efforts to do so will take many forms—examples relevant to the three rural worlds are given in table 4 at the end of the paper.

In linking the poor to markets at the national level, we emphasize the roles for the public and private sectors in creating the infrastructure and market institutions needed to lower transaction costs and risks and enhance income-generating opportunities for the three rural worlds. There is significant evidence relating rural capital-intensive infrastructure that links smallholders to markets to poverty alleviation and provision of a more equitable set of opportunities for rural citizens. Evaluations of benefits and costs are needed to rank alternative investment options and assess their complementarity. Policies also need to be designed to foster institutional innovations to enhance infrastructure investments in those rural areas where costs, lack of information, or risks prevents private initiatives from being undertaken.

Institutions, defined as the rules of the game and the players, also play multiple roles strengthening markets for agricultural commodities and production inputs. Appropriate roles of government and the private sector need to be defined to maximize benefits to smallholders from such innovations as vertical integration of domestic or international supply chains for food.

At the international level, disciplines on agricultural support and protection policies are at the center of the WTO Doha Development negotiations. Regional trade agreements are proliferating. Overarching policy issues are whether agriculture will be brought more fully under liberalized trade rules through either of these venues and how the outcomes will affect the rural poor. One dimension of the possible disciplines are their effects on food aid: the subsidy component has been criticized, but food aid also provided emergency relief and can protect the poor from long-term vulnerability to short-term shocks. Attention needs to focus on how the effectiveness of food aid can be maximized and its potential harms mitigated.

Agricultural trade opportunities are also increasingly affected by technical regulations and standards, simultaneously with domestic markets seeing growth of vertically integrated firms. In each case, the technical regulations and standards pose challenges to market participation by smallholders just as high-value demands are creating potential new income streams. Assessments are needed of the costs associated with meeting domestic and international standards and how benefits derived from international guidelines for regulation can be enhanced.

Our analysis supports a multi-dimensional agenda to address the constraints that keep markets from serving the rural poor and to enhance their participation in the domestic and global economy. Key policy issues and research needs are identified for effective policy design of domestic infrastructure and institutional development and for the performance of international agricultural and food markets. Complementary analysis is also needed addressing a wider set of markets affecting the poor, particularly those for labor, credit and land.

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Introduction

Poverty and an uneven income distribution are persistent features of developing countries. A vast segment of the population is isolated in rural areas surviving on subsistence agricultural activities, especially in Sub-Saharan Africa and South Asia. Given the predominant role of agriculture in their livelihoods, any strategy for slashing poverty and hunger must center on rapid growth in the agricultural sector. Supportive government investments and well-functioning private and public market institutions, together with foresight in the design of agricultural policies, are required to sustain increased agricultural output and raise rural incomes. The key dimensions necessary to make markets into effective channels for improving the well-being of poor rural people in developing countries are addressed in this paper. In each of several relevant areas of market development and performance, we summarize current knowledge about policy-relevant issues. We also characterize the overarching questions facing policymakers and the research vacune that need to be filled in order to design public investments, institutions and policies so that markets work beneficially for poor agricultural producers.

There are many steps in the economic chain from an isolated rural household to the trade, factor, and capital flows characterizing international market transactions. But that rural household and those international transactions can be integrally related across the many steps. Herein, we emphasize three aspects of these interrelationships. First, we focus on the integration of smallholder farmers into markets at the domestic local, sub-national and national levels and at the international bilateral, regional and multilateral levels. Second, we focus on the appropriate roles of the private and public sectors that are mutually supportive in creating adequate infrastructure and markets that sustain agricultural growth. Third, we emphasize the recent emergence of two distinct market foci for agricultural goods: those for the production and handling of bulk commodities, where low price is the critical dimension of competitiveness; and those involving higher-valued demands related to the process of production, where quality aspects are of central importance.

To address these issues, the paper is organized as follows. The next section provides a brief background on the importance of smallholder agriculture in developing countries. We then turn (section 3) to various aspects of internal market development. We address why transactions costs and risks remain high, and policies designed to improve incentives for agricultural production often have had little impact on small farmers and the rural poor. We also evaluate the market dynamics that have led to inadequate provisions of infrastructure and institutions, and discuss the design of effective policies aimed to strengthen rural factor and product markets. We examine the emerging importance of supermarkets, with their highly-structured supply chains, as it affects opportunities for small farmers.

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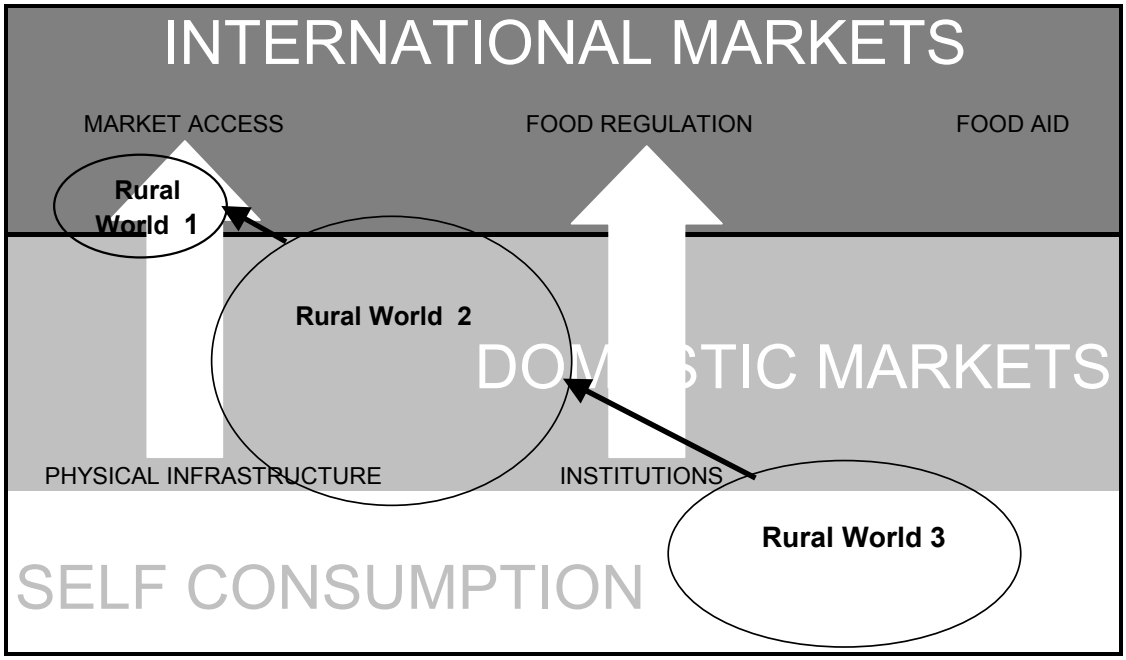
The fourth section of the paper addresses three international dimensions of the markets and policy regime facing smallholder agriculture in developing countries. First, we examine the economic effects and political-economy determinants of the subsidy and border-protection policies pursued by both developed (OECD) and developing countries. We briefly discuss constraints and opportunities for improving the international market regime to open trade opportunities and reduce trade-distorting subsidization, either through multilateral WTO negotiations or through bilateral/regional preferential trade agreements. We propose research to deepen knowledge of the effect of trade liberalization on the rural poor and to facilitate the Doha Round negotiations. The second set of concerns addressed is the regulation of food safety and quality. We examine the growing impacts of regulation in international agricultural and food markets and the role international institutions play in offering limited disciplines on national regulatory decisions. Research is needed to assess the proliferation of regulations and their benefits and costs. Third, we consider the role of food aid in international markets and development programs. Attention is focused on how the effectiveness of food aid in emergency relief and reducing vulnerability of the poor can be enhanced and potential harm from food aid programs mitigated. Research is needed on various aspects of food aid targeting and administration, as well as on the potential emergence of international disciplines to guide food aid in constrictive directions. For the poorest and most vulnerable rural households, food aid is a particularly important component of the global agricultural system.

The final section of the paper offers a brief synopsis and conclusions. While recognizing that the contributions of effective markets to growth and poverty reduction are determined simultaneously with those of many other causal factor, we have highlighted the issues that need to be addressed in this one crucial component of a development strategy. The focus of the paper purposefully encompasses both domestic and international aspects of creating opportunities for market-led agricultural growth. Countries cannot take full advantage of either domestic-based or trade-related opportunities to reduce rural poverty through agricultural production if they have not effectively linked smallholder farmers into their marketing channels. Conversely, lack of international trade opportunities can stifle production even when domestic marketing channels are functioning well. Moreover, smallholder farmers within countries differ significantly between those competitive in world markets (rural world 1), those engaged in primarily local and national markets (rural world 2), and those who are marginalized even from their local economy (rural world 3).[1] The key constraints that need to be addressed to enhance domestic, or international, market participation differ among these three groups. Thus, it is useful to consider the domestic and international aspects of agricultural market development sequentially and there is merit in progress in the domestic or international arenas independent of the other. But overdrawing a distinction can also create a false dichotomy given the fundamental forces for change driving the global and national markets and their linkages. The basic issue is to increasingly integrate smallholder farmers into these markets. The conceptual challenge is shown in figure 1.

[1] Distinctions among the three "rural worlds" has been part of earlier POVNET discussions and is being developed further in a related background paper.

Figure 1. Linking Smallholders to Markets



SMALLHOLDER AGRICULTURE IN DEVELOPING COUNTRIES

In aggregate, developing and transition economies produce nearly 60% of global agricultural output. A dynamic agricultural sector in developing countries is crucial for overall national development, poverty reduction and food security. Agricultural production per capita has been increasing over the past four decades in all developing regions except Africa. The contribution of primary agricultural activities to the total economy, while declining over time, accounts for about 7-15% of GDP and is important to the merchandise trade of developing countries (see table 1).

Around these aggregates, there is great heterogeneity among regions and countries. Agriculture is less important as a percentage of GDP in Latin America and the Caribbean (LAC) than in other regions. Sub Saharan Africa (SSA), South Asia (SA), and the UN-designated Least Developed Countries (LDCs) fall on the other extreme, with agricultural production and rural population having the largest incidences. LAC, SSA and the LDCs depend the most on agricultural exports (as a percentage of merchandise trade). LAC agriculture has higher productive (per unit of labor) and uses more capital (proxied by tractors per 100 ha) than the agriculture of developing countries in other regions. Land availability is greater in LAC, with average holding also larger and land distributed more unequally (not shown in table 1).

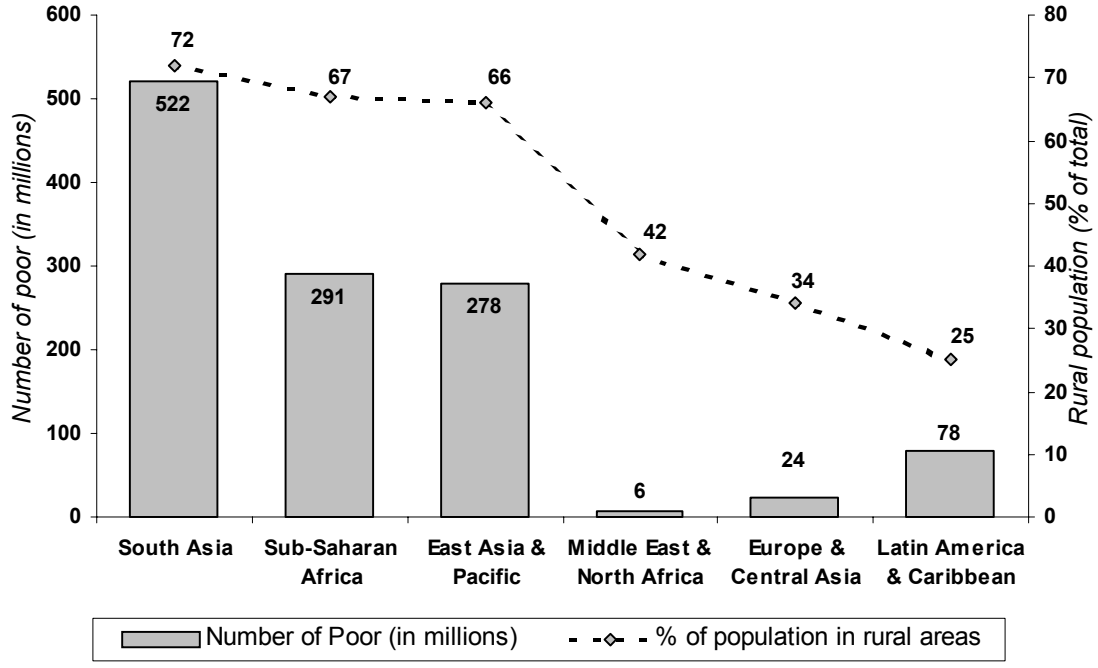
The high incidence of poverty in agriculture is reflected by the simultaneous numbers of poor and high proportions of population living in rural areas. Globally, over three-fourths of those living on less than one dollar per day are rural. The absolute numbers of impoverished people and concentration of rural population are particularly acute in SSA, SA and East Asia and the Pacific (figure 2). This is the heart of global smallholder agriculture. In South Asia alone, small

Table 1. Structural Characteristics of Agriculture in Developing Countries

	Latin America and the Caribbean	Sub-Saharan Africa	Middle East and North Africa	South Asia	East Asia and Pacific	All Developing Countries	Least developed countries
Agriculture (% of GDP)	7.9	17.9	13.9	28.3	15.4	13.2	36.7
Rural population (% of total)	26.5	68.4	43.6	73.2	67.7	60.6	76.4
Agriculture value added per worker (constant 1995 US$)	2915.5	349.2	2163.6	376.2	418.4	589.8	239.0
Agricultural exports (% merchandise trade)	28.3	23.9	4.7	17.9	11.7	15.3	35.3
Arable land (hectares per person)	0.27	0.26	0.21	0.16	0.11	0.21	0.20
Agricultural machinery (tractors/100 ha arable land)	118.2	18.0	117.8	80.9	67.9	102.0	8.0
Roads, km per squared km of total area	0.141	0.052	0.062	0.551	0.139	0.123	0.044

Source: World Development Indicators (2002).

Figure 2. Poverty and Rural Population in Selected Regions (1998)



Source: World Development Indicators (1998), Karanja (2002).

farms support much of the needs of 1.3 billion people. In several countries, like Bangladesh, most of the cultivated land is operated by farmers whose holdings are a mere 0.3 hectares. These are all farmers who rely primarily on family labor and few purchased inputs.

While small individually, in many cases smallholders account for a large share of agricultural production. In SSA, over 90% of agricultural output comes from smallholders, who account for nearly three-quarters of the poor. In India, farmers with less than 2 hectares account for 40% of total foodgrain production. They possess the highest shares of livestock—more than 55% of cattle, buffalo and goats and 70% of pigs (Narayanana and Gulati, 2002). Thus the welfare of the smallholders has powerful implications for overall agricultural production, poverty alleviation and food security.

The agricultural trade partners of developing countries in international markets are heterogeneous. African countries export agricultural products primarily to developed countries in Europe (57% of their total), while LAC markets half of its exports in the US and Europe combined. Asian developing countries trade to a greater extent with Japan (20% of agricultural exports) and with other developing countries in Asia (37%). The composition of developing country agricultural trade has been shifting over time, notably with the emergence of fruits and vegetables, oilseeds and products, meat and meat preparations, and tobacco as the more dynamic export and import products (tables 2 and 3). There has been a decline in the share of exports accounted for by traditional products of sugar, coffee, tea and cacao, and textile fibers, and of cereals as a share of imports. Nonetheless, developing countries on the whole remain net importers of cereals. Of 148 developing countries, McCalla and Valdes (1999) identify 105 as net food importers and 43 that are net food exporters. For agriculture more broadly, 85 developing countries are net importers while 63 are net exporters. These patterns are suggestive of the opportunities we now evaluate: to improve internal market operation to enhance production and provide smallholders with opportunities in domestic markets, and to enhance the opportunities for developing countries in world markets.

Internal Markets

Improving Infrastructure for Market Development

The world development report elaborated by the World Bank (1994) defines infrastructure in a concise manner, making reference to long-life engineering structures, equipment and facilities, and also the services that are derived from and utilized in production and in final household consumption. Other authors, like Ahmed and Donovan (1992), refute this type of infrastructure definition, indicating that the concept has evolved since the early work of Arthur Lewis and Albert Hirschman towards a more comprehensive definition that includes a wider range of public services that facilitate production and trade. In the case of agricultural infrastructure, Ahmed and Donovan recognize the growing importance of its role in economic development: the related literature includes agricultural research, extension services, financial institutions and irrigation as part of a wider concept of infrastructure.

Authors such as Fosu et al. (1995), reflecting this broader definition, distinguish up to 11 components of agricultural infrastructure: irrigation and public access to water; means of

Table 2. Agricultural Exports of Developing Countries (percent)

	1961-65	1966-70	1971-75	1976-80	1981-85	1986-90	1991-95	1996-99
Cereals and Prep	9.12	9.21	8.72	7.57	9.31	6.58	8.22	9.42
Coffee,Tea, Cocoa, Sp	22.94	23.84	20.16	28.29	22.29	20.42	13.91	15.22
Fruits and Vegetables	9.43	12.21	11.52	12.18	14.59	18.15	20.35	19.26
Meat and Meat Prep	3.53	4.78	4.96	3.98	4.42	4.72	6.00	5.46
Natural Rubber	7.14	5.81	4.95	5.43	4.38	4.54	4.18	3.64
Oilseed & Products	10.40	9.55	11.21	12.26	14.11	13.97	15.61	16.65
Sugar and Honey	10.79	9.58	16.85	12.73	12.26	9.65	6.71	6.24
Textile Fibres	14.74	13.23	10.63	7.27	6.56	6.72	4.29	3.29
Tobacco	3.13	2.73	3.01	2.78	3.37	3.88	6.58	6.36
Other	8.78	9.04	7.98	7.52	8.70	11.36	14.15	14.47
Total Agricultural Products	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: FAOSTAT.

Table 3. Agricultural Imports of Developing Countries (percent)

	1961-65	1966-70	1971-75	1976-80	1981-85	1986-90	1991-95	1996-99
Cereals and Prep	38.28	38.19	39.15	32.48	32.43	26.08	23.70	23.96
Coffee, Tea, Cocoa, Sp	5.49	5.57	3.92	4.78	4.09	4.12	3.62	3.39
Dairy and Eggs	6.61	6.65	6.27	6.97	7.60	7.47	6.73	6.02
Fruits and Vegetables	7.65	8.47	7.34	8.21	8.26	8.83	9.59	9.38
Meat and Meat Prep	3.01	3.46	3.49	5.10	6.12	5.97	5.93	5.92
Natural Rubber	2.33	2.10	1.60	1.62	1.20	1.71	1.41	1.36
Oilseeds and products	5.97	6.12	7.73	10.12	11.03	11.39	12.48	16.05
Sugar and Honey	7.15	4.85	8.74	7.32	6.38	5.73	5.39	5.23
Textile Fibres	8.30	7.62	7.11	6.91	5.70	7.44	7.24	6.20
Tobacco	3.09	3.16	2.54	3.16	3.31	4.39	5.76	5.26
Other	12.13	13.81	12.10	13.33	13.87	16.87	18.16	17.23
Total Agricultural Products	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: FAOSTAT.

transportation; storage services; commercial infrastructure; processing infrastructure; public services; agricultural research and extension services; communication and information services; land conservation services; credit and financial institutions; and, finally, health and education services. This listing makes reference to "rural infrastructure" before "agricultural infrastructure," thus, as Fosu et al. state, the conjunction of infrastructure services includes items that not only facilitate the development of agricultural activities, but also rural activities and sometimes even urban activities.

A similar classification of agricultural infrastructure developed earlier by Wharton (1967), which we adopt, identifies three categories: one that is capital intensive (like roads, bridges and dyers); one that is capital extensive (principally extension services or vegetable and animal sanitation services); and the institutional infrastructure (that consists of formal and informal institutions).[2]

[2] Wharton was one of the first to emphasize the importance of infrastructure in the generation of positive externalities at the microeconomic level. This author recognized that agricultural development is not exclusively determined by the "economic behavior of the producers," but also depends on the environment, which according to

In this subsection we concentrate on capital-intensive infrastructure and in the next subsection we look into the other two types of infrastructure referred to in the literature as institutions for market development.

The aggregate level links between poverty and rural capital-intensive infrastructure have been studied by several authors, but among the most important of these works, in addition to those cited above, are Lipton and Ravallion (1995), Jimenez (1995) and Van de Walle (1996). For a specific infrastructure impact case (like the role of rural roads, telephones or access to electricity on poverty alleviation) the literature is very broad allowing for works such as Howe (1984), Binswanger, Khandker and Rosenzweig (1993), Jacoby (1998), and Lebo and Schelling (2001), among others. Recently, Renkow et al. (2003) estimate the fixed transaction costs (those not dependent on commercialized volume) that impede access to product markets by subsistence farmers in Kenya. These authors estimate that high transaction costs are equivalent to a value added tax of approximately 15%, illustrating the opportunities to raise producer welfare with effective infrastructure investments. Smith, Gordon, Meadows and Zwick (2001) show for the case of Uganda that the re-habilitation of roads increases the labor opportunities in the service sector.

Moreover, based on an infrastructure index that includes road, rail and telecommunications density, Limão and Venables (1999) found that infrastructure is a significant and quantitatively important determinant of bilateral trade flows. Improving destination infrastructure by one standard deviation reduces transport costs by an amount equivalent to a reduction of 6,500 sea km or 1,000km of overland travel. According to their findings, most of Africa's poor trade performance can be accounted for by poor infrastructure.

In order to further analyze the effects of public infrastructure on rural development and rural poverty, it is necessary to distinguish between direct and indirect effects. The former occur when an increase in public infrastructure is accompanied by an increase in production, shifting the production frontier and marginal cost curve, and also increasing the rate of return for private investment in rural activities. The latter takes place as the access to public infrastructure permits a reduction in the transaction costs that small producers face when they integrate into the supply and factor markets. These lower transaction costs change the structure of relative prices significantly for the producer, stimulating changes in the methods of cultivation and breeding, possibly inducing such changes as transition in the allocation of the labor force between agriculture and non-agricultural uses. Adequate access to public infrastructure will also have a positive effect on whether or not technical changes that elevate productivity are achieved, for both agricultural and non-agricultural rural activities. A number of microeconomic-level studies have investigated how a greater investment in infrastructure raises agricultural productivity. But infrastructure investments have many effects.

As long as the majority of rural households are dedicated to more than one income activity, whether salaried or non-salaried, agricultural or non-agricultural, it is not abnormal that the access to public infrastructure will also affect household labor assignments (diversifying

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Wharton includes physical-climatic, socio-cultural and institutional components that form what he calls "the agricultural infrastructure."

livelihoods). Lanjouw, Quizon and Sparrow (2001) for example find for Tanzania a significant increase is non-agricultural activities as a consequence of a better infrastructure in roads. This diversification could be the product of the necessity to hedge against unanticipated risks in a context where credit and insurance markets malfunction or are not existent (Zimmerman and Carter, 2003; Ellis et al., 2003). Alternately the result could be due to the existence of entry barriers that prevent access to more profitable labor markets due to insufficient public or private assets (Reardon et al., 2001). In either of the two cases, the access to public infrastructure could have a direct or indirect role increasing the income generating opportunities for the poorest rural populations.

In summary, the majority of studies recognize that infrastructure investment has a strong impact on rural incomes and especially on smallholders. However, this literature has not been completely successful in assessing the benefits and costs of alternative infrastructure investment options or the causality of relations that generate higher rural incomes due to a better endowment of infrastructure services. The work carried out by Fan and Hazell (1999), Zhang and Fan (2000), Fan et.al (2000a), Fan et.al (2000b) and Fan et. al (2002) in India and China are some of the few studies that look into the relationships between investment in infrastructure, rural grow, poverty alleviation and the role of complementarity of investments. The problem with the lack of causal relationship knowledge between the investment in infrastructure services and the increase of income generating opportunities and welfare benefits of rural populations is that the possibility of developing specific policy recommendations is very limited. This problem normally results in policy recommendations that are directed towards a general increase in public infrastructure investment but lacks opinions about appropriate intervention strategies for each specific context.

In light of this, and with the scarce public fiscal resources available in developing countries, knowing the relative profitability of each type of public infrastructure is critical. Likewise, it is essential to understand the principal mechanisms that stimulate changes in the livelihoods of rural inhabitants as a result of a determined increment in rural infrastructure services.

Overarching Policy Issues

There is an increasing consensus that providing adequate infrastructure is an important step in the process of poverty alleviation and in providing a more equitable set of opportunities for rural citizens by linking smallholders to the markets, and by reducing the market risk and transaction costs they face. An overarching policy issue is to *apply benefit-cost analysis to rank alternative infrastructure investment strategies and* projects. With limited public resources, several countries in Africa and in other developing regions are undertaking important reform processes in order to promote private investment in the provision of infrastructure. An overarching policy issue is *whether this reform processes will have the benefits expected.* If reform is successful in some area, a third overarching policy issue is *how to address any widening disparities between those benefiting from reforms and those rural areas where the cost, the lack of information, or the risk prevents private initiatives from being undertaken.*

Research Needs

Even though many authors recognize that the externalities resulting from infrastructure investment play a central role in rural development, there is little existing empirical evidence that substantiates the argument at the microeconomic level. Future empirical work to analyze rural households with different levels of access to public goods and services should allow for the study of the presence and importance of these externalities. Some of the main challenges in this field are to:

- Identify investment opportunities that generate the largest multiplier effects and that enhance the attraction of public and private investments for the rural sector. Also, to raise the private and social profitability of the executed investments.
- Improve knowledge about the impact that complementary investments in rural infrastructure (water, sewerage, roads, electricity and telecommunications) may have in market development and in reducing poverty.
- Estimate the existing complementarities between the different types of public infrastructure and the endowments of private assets (human capital, financial-physical capital or social capital), which are already possessed by rural populations, in order to maximize the impact of public infrastructure investment.
- The design of strategies to provide institutional arrangements for the adequate access to public infrastructure needed to enhance the environment in which private sector activities take place. Specifically, there is a need to address issues concerning how to foster institutional innovations to enhance infrastructure investments.
- Identify which bottlenecks (physical or institutional) impede the attainment of maximum potential for investment in rural infrastructure services.

Improving Institutions for Market Development

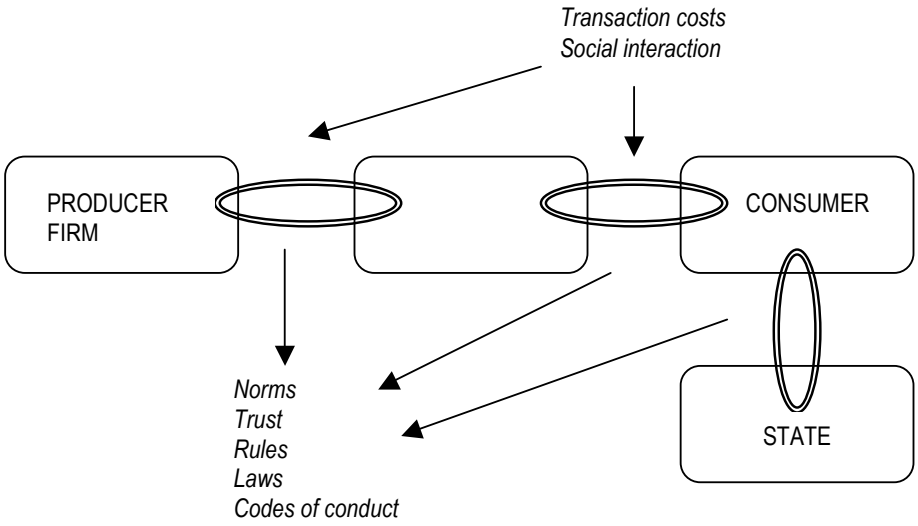
The academic literature has not yet agreed on a specific definition of institutions. We adopt a definition that includes the Williamson (1985) and Northian (1990) transaction cost approach, which focuses on institutions as efficient solutions to organizational problems in a competitive framework. Rather than following the distinction of North (1990) between institutions and organizations we adopt an inclusive view in which institutions are defined as the structure of relations between individuals within the system of market interactions in which the players include producers, consumers and the state. As well as the players, this definition includes the rules of the game (relations between the players) that are organizations in North's definition.

Under the broad definition, institutions play five potential roles in strengthening markets for commodities produced, bought, and sold by smallholders: reducing transaction costs; managing risk; building social capital; enabling collective action; and redressing missing markets (figure 3). Empirical research on market institutions seeks to illuminate these five roles.

It is increasingly clear that the institutional infrastructure to facilitate market exchange is a critically important area to countries recently experiencing the shortfalls of market liberalization, specifically for smallholder agriculture. When market information and markets themselves are

not accessible to the rural poor, farmers capture little of the value that they create, demand and supply are highly unstable, and distribution costs for rurally produced goods are very high. Simply put, markets do not work for the very poor.

Figure 3. Institutions as Links in the Chain of Market Interactions



Source: Gabre-Madhin (2003).

The high risks of production and cycles of over-supply and price depression create financial risks throughout the distribution chain that inhibit investment and access to capital. Monopolistic practices, corruption, and excessive regulations also add to the burden of the rural marketplace. The high costs, risks, and "friction" in rural agricultural markets prevents markets from achieving sufficient scale for efficiency and similarly prevent the low-cost and reliable supply of production inputs such as seed, fertilizer, and other goods to farmers. The very poor farmers also lack the political empowerment, market knowledge, and business knowledge to address these market roadblocks Thus, poor rural farmers lack the capacity to improve and influence the markets upon which their lives depend. But some of these assets can be developed through effective organization, technical training, and means for assembly and communication.

Overarching Policy Issues

The need to integrate smallholder farmers into markets at the domestic (and also international) level requires well-functioning private and public market institutions. An overarching policy issue is *how can positive institutional change be fostered to improve market efficiency?* Both the private and public sectors will often be involved in building market institutions. A second overarching policy issue is thus, under various circumstances, *what is the appropriate role for government in providing or facilitating the development of those institutions that are necessary to promote agricultural markets and rural income growth?* When private institutions are in place, what role should the government play in those arrangements, and should the private sector also play a role in bringing about institutional change? When governments are involved, a third

overarching policy issue is *how can institutions be designed to be self-sustaining and incentive-compatible*?

Research Needs

With respect to institutions there is still a lot of research to be carried out, specifically it will be important to undertake research on:

- Understanding the mechanism of fostering institutional change. In order to generate relevant and timely policy research, a shift in emphasis from theoretical to applied analysis is critical. How will new marketing structures affect different segments of the rural population, especially smallholders and other poor households
- Study of market dynamics in the presence of asymmetric information and inadequate provision of institutions. How markets function, what roles different institutions play in supporting market exchange, and how to design, transfer, and maintain these institutions. In this respect it will be important to understand the underlying market institutions—such as contract farming, vertically integrated schemes, market information systems, commercial rules and laws, commodity exchanges, and producer and trader associations—needed to enhance the environment in which private sector activities take place.
- Issues concerning how to foster institutional innovations to reduce transaction costs through market information intelligence systems, auctions and exchanges, information on standards and grades, and legal enforcement mechanisms.
- Management of risk through forward and option contracts.
- Acquisition of relevant social capital among traders and farmers. Research is required on the roles of trader networks and associations in building social capital, and on the roles of producer associations and cooperatives in empowering smallholders in the market.
- To determine means to override missing markets, research is required on the potential impacts of inventory credit schemes and inter-linked contracts on smallholder access to credit.
- Understanding the complexity and diversity of institutional arrangements for facilitating market exchange, in particular the critical enforcement of property rights and economic coordination of exchange.
- It is also necessary to address the appropriate role of the public sector and of public-private initiatives in bringing about institutional change, as is clearly the case with the growth of supermarkets, which we detail in the next section.

Growth of Supermarkets and Contract Farming in Developing Countries

Supply chain management and specifically the rise of supermarkets in the domestic markets of developing countries is a significant recent institutional change affecting smallholder agriculture. Supermarkets have emerged as one of the most important buyers in some developing countries, particularly for the high-value products meeting specific consumer demands related to production process and quality. In Latin America, supermarkets buy 2.5 times more produce from local farmers than the region exports to the rest of the world (Reardon and Berdegue,

2002). Supermarkets are now a strong growth retail sector in Asia and Africa, where smallholder agriculture is concentrated.

Christopher (1998) defines supply chain management as: "The management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole." Transaction cost economics also gives a theoretical framework for understanding the governance structure of the supply chain. Many authors point out that there is a continuum of vertical coordination, at one end is the spot market and on the other end is vertical integration. Between the two extremes are hybrid forms, which can be divided into specification contracts, relation-based alliances and equity-based alliances with different coordination characteristics of direction and control with regard to interdependence, information sharing, duration of relationship (Peterson et al., 2001).

Although relationships in supply chains can range from arm's length relationship based on vertical restriction to vertical integration, as identified by Kaufman (1999) there are four major goals pursued by retailers through the use of supply change management: (1) lowered operating costs, (2) decreased procurement costs, (3) reducing marketing costs, and (4) lower distribution costs.

For poor farmers, the benefits of new supply chain management are that it can provide information on new products, input, credit and extension services, and marketing services. These can ease the resource constraint that farmers face otherwise, and reduce production and marketing risks for farmers. Some services such as information and extension services that private supermarket supply chains may provide to farmers can also save scarce public resources. Because of supermarkets, agents such as traditional vendors based in villages and sub-districts, and wholesalers based in districts and big cities, are usually bypassed in the modern procurement system, reducing the transaction costs smallholders will normally bear.[3]

Trust is an important factor in shaping the effective and efficient supply chain of fresh produce. Trust may be defined as "a set of expectations that managers of firms adopt about the future behavior of their exchange partners" (Rademakers, 2000). Kemp and Ghauri (2001) maintain that conflict will be solved in an early phase and in a way that satisfies both partners when in a situation with a high level of trust (2001). The presence of trust can reduce the specification and monitoring of contracts (Hill, 1990; Fynes et al., 2001), thus resulting in reduction of transaction cost. Trust may also lead to enhanced revenues for alliance partner firms' resources (Barney and Hansen, 1994; Dyer Singh, 1998; Hansen et al., 2001, 2002).

Changes in procurement systems toward integrated supply chains, can have important implications for the product quality demanded from rural producers and on their bargaining power. In Latin America, the shift from reliance on traditional wholesalers to centralized procurement and specialized wholesalers gave supermarkets "the incentive and capacity to impose standards" (Balsevich et al., 2003). Similarly in Indonesia, supermarket chain such as Hero and hypermarket chain such as Giant rely on specialized vendors. This paves the way for imposing standards and product safety measures in farm production. Such output control affects production costs and requires new management ability. And while control on output quality can

[3] See Chowdhury, Gulati and Ramachander (2004) for more details.

deliver products according to the preference of the end consumers, control on value chain can also act as entry barriers for potential competitors and pave the way for monopolistic rents affecting the returns earned by smallholders with limited bargaining power.

Finally, for consumers, the new supply chain arrangements of supermarkets are important since they are the closest to urban consumers and in a demand driven diversification, supermarket/retail chains are the first agent to know the consumers' preferences and act accordingly. However, supermarkets can also influence consumer preferences by introducing new products and packaging. Therefore, there is a two-way interaction between consumers and supermarkets.

Overarching Policy Issues

The changing marketing structures in developing countries are clearly moving towards supply chain management. An overarching policy issue is *whether vertical restriction agreements or vertical integration arrangements will provide new opportunities for small holder farmers or leave them further marginalized.* If smallholders can benefit from the emergence of new supply chains, an overarching issue to be addressed is *what are the institutional arrangements through which their participation and gains can be maximized*.

Research Needs

With respect to supply chain management it will be important to evaluate:

- How the new marketing structures will affect different segments of the farm and non-farm rural populations.
- How supermarkets and other supply chain arrangements are affecting the inflows of foreign direct investments
- What mechanisms of integration of smallholders into supply chain arrangements are taking place and which have been successful and which not.

REGIONAL AND MULTILATERAL INTERNATIONAL MARKETS

Expanding Market Access Through Policy Reform

In this section we turn from issues related to internal markets in developing countries to trade policy, related agricultural subsidies and the situation within international agricultural markets. Agriculture has long been a special case under international trade rules. Until 1995, there was no multilateral GATT framework for agriculture. The WTO Agreement on Agriculture has provided such a framework, with disciplines on tariffs and market access, production-stimulating support and export subsidies. These disciplines are widely recognized to have left room for substantial support expenditures and border protection. One measure of these interventions among OECD countries is the Producer Support Estimate (PSE) which combines the monetary effects of interventions that raise prices received by farmers above market levels with direct budgetary

transfers. Total PSEs among OECD countries exceed several hundred billion dollars annually (OECD 2003).

The high levels of support for agriculture among OECD countries have become a contentious issue in the current Doha Round of WTO trade negotiations. Just prior to the September 2003 ministerial mid-term review in Cancun, the United State and European Union put forth a proposed framework for a new agriculture agreement that a group of developing countries (the "G-20" including Brazil, China, India, and South Africa) rejected as offering too little subsidy reduction or new market access. For example, the US/EU called for an unspecified reduction in total "amber box" subsidies that are linked to production and elimination of export subsidies only for unspecified products "of interest to developing countries." The G-20 countered with a call for product-specific reductions in amber-box support and complete elimination of export subsidies. Similarly, the US/EU proposal called for four different categories of tariff reductions, while the G-20 called for a maximum cap on all tariffs of the developed countries, an expansion of market access under low-tariff "tariff-rate quotas," and elimination of special safeguards for developed countries related to these TRQs.[4]

Achieving agricultural policy reforms to reduce interventions and subsidization that constrain the international market opportunities of producers in developing countries will not be easy. Farm groups remain powerful lobbies in developed countries and farm support programs are deeply entrenched. In this regard, an important dimension of the current policy discussions concerns alternative farm policy instruments. In the United States, policy has slowly shifted since the 1960s to rely less on supporting domestic prices and more on compensating direct cash payments to farmers. Farm bills in 1985 and 1996 accelerated this shift, while the more recent 2002 farm bill, raised subsidy levels and strengthened their counter-cyclical relationship to market prices. In the EU, a shift away from price supports has also begun. The US and EU contend that their cash payments are less distorting of world markets than earlier policies, and there is evidence that these cash payments can be designed to affect land prices more than production.[5] But developing countries with fewer fiscal resources remain suspicious of these subsidies.

The trade and support policies of developing countries are also at issue in the debate over global rules for agriculture. There is some evidence that developing countries have reduced what was once a relatively widespread policy bias against agriculture. Yet, there is less systematic reporting of the stance of policy in developing countries than for the OECD countries. Developing countries have insisted in the Doha negotiations that they retain substantial tariff flexibility under high bound rates and some have called for a new category of "development box" support options exempted from WTO restraints. The current WTO rules, in any case, provide developing countries with substantial latitude, including under special and differential treatment provisions. Developing countries such as India have used increases of applied tariffs as a counter-cyclical policy instrument when prices are low, in a manner similar to the direct

[4] The negotiating positions are available on the WTO web site, as is a subsequent proposal put forward by the agriculture negotiations chairman as a possible bridge between the conflicting views. See Orden and Taylor (2003) for a discussion of the emergence of the competing positions and Josling and Hathaway (2003) for recommendations for progressing.

[5] Orden, Paarlberg and Roe (1999) characterize the shift in U.S. policy through this "cash out" as the only path to reform that has proven politically viable. See Orden (2003) and the references cited therein for discussion of the extent that support payments can be "decoupled" from production.

payments provided to farmers in OECD countries. They have thus argued that any constraints negotiated in the WTO on tariffs have to be linked to constraints on the counter-cyclical direct payments.

With multilateral negotiations to open agricultural markets currently bogged down in the WTO, parallel negotiations about bilateral and regional trade relations are taking on importance. Some of these arrangements are being negotiated between certain developing countries and specific developed countries. Yet another complexity in international markets arises from these regional trade agreements (RTAs) and preferential market access concessions. With the notable exception of Mexico and the United States in the North American Free Trade Agreement, RTAs have generally exempted or only partially liberalized trade of sensitive agricultural products even over very long planned time horizons. Unilateral concession arrangements have likewise often excluded such products. The latter arrangements have, nonetheless, brought some gains to the least developed countries (Yu and Jensen, 2004).

There is also substantial ferment in the trade relationships among blocs of developing countries. From Latin America, to Asia to Africa, there is potential to create market opportunities through arrangements that increase "south-south" trade. In Sub-Saharan Africa, for example, Diao and Yanoma (2003) identified more than 250 specific agricultural goods for which one or more African country has a comparative advantage based on trade analysis. Nearly one-third are goods, including such staples as livestock and livestock products, cereals, roots and tubers, peas and beans, for which other African countries have comparative disadvantage and are importers. Intra-regional trade offers opportunities that complement trade with countries outside of the region. Enhancing intra-regional trade would provide opportunities for the rural poor and could help to alleviate somewhat Africa's food security problems.

Evaluating the effects on developing countries of the OECD subsidies and protection, or of agricultural policies worldwide, or of specific RTA or preferential access agreements, and on poverty in developing countries specifically, are complex challenges for several reasons. Such evaluations must rest on counterfactual simulation of alternative policy scenarios. Each of a diverse set of policies has to be represented in a model constructed to assess the impacts of reforms, and the effects of the hypothesized policy changes have to be traced through behavioral effects on supply and demand to new world prices, trade flows, and incomes. Models to accomplish these tasks differ in assumptions about crucial parameters, levels of aggregation, scope of commodity and country coverage, and many other dimensions.

A number of model results were reviewed recently by Beierle and Diaz-Bonilla (2003). Their objective was to describe what is known and the remaining knowledge gaps about whether trade liberalization (in the form of reduced import restrictions and production and export subsidies) would benefit smallholder farmers and others in poverty in developing countries. Several key findings are:[6]

- Most models demonstrate negative impacts of OECD policies and positive impacts from developed country liberalization on developing country welfare, agricultural production and income, and food security.

[6] Space limitations preclude a full synopsis of the Beierle and Diaz-Bonilla review and other empirical literature.

- There will be significant variation in the impacts by country, commodity and for different sectors and regions within countries.
- OECD market access restrictions harm developing countries, but effects of production subsidies are more ambiguous.
- Developing countries tend to gain more from liberalization of their own policies than from reforms by the OECD.
- Model results differ on the basis of assumptions such as scope of commodity coverage, mobility of resource among alternative crops and between farm and non-farm employment, availability of underutilized labor, and static versus dynamic analysis.
- Multilateral liberalization reduces the benefits derived from RTA or preferential access agreements, but these losses are relatively small compared to gains from the broader reforms.
- Most models don't have sufficient resolution to analyze the impacts of reforms on smallholders, subsistence farmers and other poor households but there is an emerging literature attempting to do so.

Overarching Policy Issues

Agriculture has been an exception to the liberalized global trade regime that has emerged under the GATT and WTO since the end of World War II. An overarching policy issue is *whether agriculture will be brought more fully under liberalized trade rules*. Whether or not this happens, *the consequences for the poor in developing countries* is a second overarching issue. Moreover, if the new farm support instruments being adopted by OECD countries are proven to be less distorting of world markets, a third overarching policy issue is *whether mechanisms can be designed to facilitate further adoption of better instruments by developed and developing countries*?

Research Needs

Our review of policy-relevant knowledge suggests numerous research needs.

- Economic analysis will be required of specific proposals that emerge in the Doha negotiations.
- Further assessment is needed of the impacts of alternative farm policy instruments, including not only the cash payments toward which OECD countries have moved but other options being proposed as a basis of policy, such as subsidies related to various "stewardship models" focused on environmental and rural development.
- Specific attention is needed to improve the mapping from aggregate outcomes to effects on the poor.
- Better understanding is needed of agricultural support in developing countries, along the lines of PSEs and their components, and with particular attention to the trend level versus counter-cyclicality of support policies.
- Better knowledge is need about the circumstances under which RTAs and preferential access arrangements include agricultural products, and of the dynamic relationship of these agreements to broader reforms.

- Research is needed to design coherent strategies across international institutions to facilitate a better structure of international agricultural markets.

Food Regulation and Trade

Regulations and standards related to food safety and quality are a dimension of the international markets for agricultural and food products that has come to bear increasingly on poor farmers in developing countries. Controls on the spread of animal and plant pests and diseases, and grades, standards and other quality criteria, have always impacted on international trade in bulk agricultural products. With emergence of modern agricultural production processes, and with the shift in international trade toward higher-value products, these regulatory measures and standards have assumed greater importance. Moreover, within the growing high-value markets, consumers are increasingly expressing preferences about the process by which their food is produced, and are demanding verification of such claims. These phenomena are not restricted to wealthy countries, as the rise in supermarkets and introduction of their supply-chain management systems for domestic markets within developing countries (discussed above) demonstrates. But increased regulation is posing new challenges to developing countries in international markets, just as the growing high-value demands are creating potential new income streams for those agricultural producers who can meet the emerging demands. Once viewed as "niche" markets, process-based agricultural production has become big business and an opportunity for poor countries.

Although the private sector undertakes most food production, processing, distribution and marketing activities in most countries, without exception governments are involved in regulation of their food sectors.[7] The goals of food regulation can be classified as either reducing risks or related to product quality. The measures used can also be categorized by whether they focus on content or process attributes of products and by their breadth, scope and instrumentation. The provision of public goods provides the justification for many risk-related measures, such as controls for infectious animal and plant pests and diseases. Risk-related measures can also remedy market failures stemming from imperfect information about the safety of food products. The regulation of product quality also aims to safeguard the integrity of market transactions through remedies for imperfect information that might otherwise increase transaction costs for firms and consumers.

Because differences both in production circumstances and consumer demand factor into regulatory decisions, the normative case for harmonization among countries is not strong. Sovereign governments retain the principal authority over almost all dimensions of their food regulations and standards. Yet, there are justifications for international oversight and coordination along similar lines (provision of global public goods and reduced transaction costs) to those for national regulation. Achieving the appropriate balance within countries between reliance on domestically determined and internationally agreed-on specifications for agricultural and food products is a broad challenge in regulation. No one doubts the need for risk-reducing regulations and well-developed scientific regulatory infrastructures, nor the importance of meeting consumer preferences. But developing countries have been concerned that rising standards have sometimes been used to exclude their products from developed country markets.

[7] See Josling, Roberts and Orden (2004) for further discussion of many of the issues discussed in this subsection.

At other times, the concern has been raised that the administrative requirements associated with meeting international obligations related to food regulation impose too large a burden on the governance capacity in developing countries (Finger and Schuler, 2000).

One factor that is complicating the effects of food regulation is the increased emphasis on process-based standards. A food regulatory measure can address either an attribute of the final product (a content attribute) or a characteristic of the production process (a process attribute). Each kind of attribute can be important to but not detectable by food consumers. When regulatory authorities choose to achieve an information or other public policy goal through regulations directed at content attributes, verification can be achieved through testing. Regulations that instead target process attributes generally require more complex record-keeping and tracking. This distinction will affect of the provisions of the regulation that set out the breadth, depth and precision of requirements to substantiate claims about food products, which in turn will affect the costs and benefits of measures imposed. Several of the most pressing regulatory challenges have arisen because the regulation of quality-related process attributes, particularly attributes that are "non-product-related process and production methods (npr-PPMs)," has been at issue.

At the center of addressing these concerns is the international framework for national regulations and standards operating through the WTO and related scientific and standards organizations. The key WTO agreements are those on sanitary and phytosanitary (SPS) measures and on other technical barriers to trade (TBT).[8] The SPS agreement contains principles to guide regulation that include transparency, science-based risk management, harmonization, equivalence and regionalization. The TBT agreement likewise encourages transparency and coordination of national regulations and standards through adoption of international norms. Each agreement requires that regulatory objectives of countries deemed legitimate under WTO provisions be achieved in the least trade-distorting manner. But neither agreement requires that countries weigh the costs and benefits of their regulatory decisions, either domestically or for their trade partners. Thus, the WTO agreements provide some disciplines on what countries do, but they are not blueprints for optimal regulation.

With the SPS and TBT agreements in place since 1996, a record of their performance has now accumulated. Transparency of regulations has been improved through a process of notifications by countries, and regular meetings of WTO committees for each agreement have provided a forum for countries to raise objections to measures of their trade partners. Between 1995 and 2001, more than 2,400 SPS notifications were submitted and nearly 200 objections to such measures were lodged. Similarly, over 4,100 TBT measures were notified, of which nearly 800 referenced agricultural products, with labeling and use of npr-PPMs drawing the most objections. Both developed and developing countries, but not the poorest countries, have made active use of these notification mechanisms. For SPS measures, the requirement that they be based on scientific evidence of risk has also encouraged countries to review their regulations and in some cases to unilaterally modify or voluntarily modify some measures after bilateral technical exchanges (Josling, Roberts and Orden, 2004). The promotion of harmonization or recognition

[8] Basic provisions of the GATT also apply to food regulation and use of geographical indications for foods comes under the TRIPS agreement. Some multilateral environmental agreements also play a role in defining the latitude and limits to regulation within the food sector.

of equivalence of regulations has generally been less successful under the WTO, while regionalization (recognition of sub-national regions as pest or disease free) has depended heavily on efforts by the exporting country seeking this status.

The compliance of countries with the WTO agreements is reinforced by a formal dispute settlement process and rulings in such cases have helped defined the scope and obligations of the WTO rules. Of 32 formal requests for consultations about a food regulation issue, six distinct cases have proceeded to establishment of dispute panels and rulings by the WTO's Appellate Body. In the four SPS cases, developed countries challenged regulations of other developed countries and each time the regulation was judged to violate the requirement that it be based on a scientific risk assessment. These cases have shown that even the measures of countries with advanced scientific establishments are not immune to challenge. In the other two food regulation dispute cases, developing countries have lodged complaints against measures of developed countries. In a case brought by Peru against the EU, the WTO ruled that international standards set by the Codex Alimentarius were effective to achieve labeling objectives for sardines, while in a case brought by India, Malaysia and Thailand it was ruled that a U.S. process standard requiring use of turtle excluder devises was legitimate under GATT environmental protection provisions. These two cases, demonstrate that developed country quality-related measures that may restrict trade are not immune to challenge and that developing countries can win a WTO dispute. But the evidence is very limited.

Most regulations are not challenged informally or formally, and experience has also accumulated about exporters from developing countries meeting regulations and standards set by developed country importers, even if those measures might be deemed overly stringent on a benefit-cost basis. There are numerous case studies of successes in this regard. Among examples that have been described are the shrimp industry in Bangladesh, avocadoes in Mexico, and Bolivian exports of Brazil nuts (see Unnevehr, 2003, and Yamagiwa, 2004).

Overarching Policy Issues

Food regulations are becoming increasingly important in international markets. An overarching policy issue is *whether requirements to comply with safety and quality standards enforced by regulations will marginalize exporters from developing countries.* Given the economic rationales for government involvement in food regulation, a second overarching policy issue is to *define the appropriate roles of the public and private sector within countries in meeting food safety and quality goals*. A third overarching policy issue is to *enhance the net benefits derived from performance of the international framework for national food regulation*.

Research Needs

Diverse issues related to food regulation among countries are not as amenable to generic assessment through economic modeling as nontechnical trade barriers. Research needs include:

- Careful inventory and assessment of the scope of problems developing countries face due to food regulation that is challengeable under WTO rules.

- Case study economic assessments of costs of compliance with food regulations, with particular attention to competitive disadvantage related to scale of operation when domestic and export standards differ and to how the emergence of supermarkets within the internal markets of developing countries is affecting their ability to meet the requirements of international regulations.
- Case studies of the gains associated with modifications of food regulations to facilitate trade.
- Further assessment of whether the trend is toward proliferation of food regulations and standards that are challengeable under WTO rules or toward increased discipline on such measures.

Food Aid

Food aid is another component of international transactions that directly and indirectly affects rural poverty in a globalized agricultural economy. Modern food aid emerged after World War II, particularly with the U.S. P.L. 480, the Agricultural Trade Development and Assistance Act, of 1954. This law asserted multiple goals for U.S. food aid—both combating world hunger and malnutrition and promoting agricultural development, but also expanding trade and developing export markets for U.S. agricultural commodities. Food aid from the United States peaked in the 1960s, but it has remained the largest single donor of food aid, accounting for about 55 percent of the total during the 1990s. Food aid now accounts for less than 5 percent of global trade in agricultural and food products. Yet, many controversies surround the use of food aid either for emergency crisis relief or as an instrument of humanitarian and development policy. Given relatively fixed or slowly changing budgets, there is a built-in cyclicality of food aid: the volume of food aid available will be lowest when commodity prices are highest (and need is, in that sense, greatest). Moreover, there is much evidence that provision of food aid is subject to political pressures related to supporting world commodity prices and other objectives.

Food aid can be distinguished between emergency aid, project aid and program aid. Emergency aid, which has been an increasing proportion recently, occurs in response to natural disasters or conflicts that leave vulnerable populations at risk of starvation or severe malnutrition. Project aid is associated with development of specific food security or development projects, such as a school feeding program. Program aid is the most general use of food as a form of foreign assistance, essentially providing the monetized value of the food as a resource for use by a developing country government (see below), although sometimes with conditionality requirements about how this aid is utilized.

Food aid can be procured in the donor country, local markets of the recipient country or from third-country sources. It can be provided through bilateral or multilateral channels, and these channels can encompass governments, multilateral agencies such as the United Nations's World Food Programme (WFP), and/or non-governmental organizations (NGOs). The U.S. P.L. 480 requires use of commodities produced in the United States and, in 2002, nearly 90 percent of the total 9.6 million tons of food aid delivered worldwide was procured in the donor countries. Contributions in financial terms by donors, rather than in the form of food commodities, allows greater flexibility in providing food aid, which can be source in the donor country or elsewhere using the aid financing. Local or third-country (triangularization) purchases accounted for a

higher percentage of the food aid delivered by the European Commission's (EC) multilateral food aid program (70 percent), when food aid is provided for emergency purchases (67 percent), and of food deliveries through the WFP (which accounted for nearly 40 percent of food aid in 2002, nearly 60 percent of was procured in recipient or third countries) (Hoddinott, Cohen and Bos, 2003).

Once food aid is provided to recipient agencies, it can either be delivered directly as food to targeted populations or "monetized" through sale in recipient country markets. When monetized, the cash value of the food aid, becomes a resource that the agency can use to support various activities. Even in the case food aid for emergency purposes, some of the food can be sold to cover non-food costs of aid delivery. In the cases of project and program aid, a great deal of monetization occurs. There is concern that food aid can depress incentives for local food production. But well-directed food aid, or aid programs financed by monetization of food aid, can also provide essential emergency relief and reduce vulnerability of the poor to short-term shocks that undermine their longer-term human and physical assets (Barrett and Maxwell, 2004; Hoddinott, Cohen and Bos, 2003).

Several international institutions provide guidelines for food aid. The Food Aid Convention is a voluntary agreement among donors that has attempted to establish global food aid targets, eligible commodities and other guidance criteria but has no enforcement capacity. The FAO also has an advisory committee on food aid. In addition, food aid is subject to limited rules under the WTO, and those rules may be subject to additional clarification in the ongoing Doha Round negotiations. The current rules exempt "*bona fide* food aid" from restrictions on export subsidies, and the non-binding 1994 WTO Marrakesh Ministerial Decision recommends increased food aid as a means to help developing countries. But as direct export subsidies allowed under the Agreement on Agriculture are subject to negotiation of increased disciplines (possibly even being phased out), indirect forms of subsidization, including some uses of food aid, are also under scrutiny. An initial EC proposal called for disciplines on food aid provided on a credit, rather than grant, basis. Subsequently, a draft proposal by the chair of the agriculture negotiations, suggested that food aid used for surplus disposal or market development be treated as an export subsidy, and the US/EU proposal of August 2003 called for disciplines aimed at preventing "commercial displacement through food aid operations."

Food aid remains the subject of ongoing controversies in the context of the issues described above. It is widely recognized that provision of aid in the form of food is not the optimal form for development assistance, but likewise that donors would probably not provide equivalent cash development assistance in place of food if existing food aid programs were terminated (Hoddinott, Cohen and Bos, 2003). Thus, attention has focused on how its effectiveness can be maximized and its potential harms mitigated (Barrett and Maxwell, 2004).

A recent international conference sponsored by the German government led to a set of recommendations representative of the types of suggestions that have been put forward to improve food aid in its multiple dimensions (von Braun, 2003). Recommendations were made concerning general issues, emergency and development uses of food aid, management and delivery, and reformed international and national governance of food aid programs. Among the key recommendations were:

- that food aid encompasses related international and domestic actions and expenditures;
- that food aid should address well-defined problems involving immediate food shortages;
- that attention should focus on responses to natural disasters as well as conflicts;
- that food aid should protect assets of the poor and prevent destitution;
- that emergency relief should be linked with long term development actions;
- that food aid should only be utilized for development objectives when they cannot be met more effectively by other forms of aid;
- that responding to HIV/AIDS presents circumstances in which food aid can be used constructively;
- that food aid should be clearly separated from commercial trade and should avoid disrupting local markets and investment and production incentives;
- that consideration need to be given in food aid to preserving bio-safety in recipient countries;
- that the role of the private sector and civil society in food aid delivery should be strengthened;
- that a new type of multilateral Food Aid Compact should be considered.

Overarching Policy Issues

Food aid programs have served multiple donor objectives and have been criticized as an inefficient form of assistance to developing countries, but there are also calls for increased food aid expenditures. *Whether food aid shrinks or grows* is an overarching policy issue. This will partly be determined by *whether WTO disciplines on food aid are strengthened or increased food aid is designated as an adjustment mechanism* to assist vulnerable countries as tighter global rules are applied to agricultural support and border protection. *Improved* d*esign of food aid programs* an overarching policy issue in any event, so that aid is targeted to provide relief in natural-disaster and conflict-based emergencies and to mitigate the long-term consequences on vulnerable populations of these shocks.

Research Needs:

There is a range of governance and implementation issues that need to be addressed:

- Research is needed to identify the cost of donor country versus local and third-party sourcing and on the efficacy of bilateral versus multilateral and government versus private sector delivery.
- Research is needed on design of institutional mechanisms to ensure timely delivery of emergency food aid.
- Research is needed on the role of improved markets in increasing the efficacy of cash relief versus food aid in the case of natural disasters or conflict-recovery circumstances.
- Research is needed to identify other elements of better food aid administration. In particular, how can targeting be improved so that food aid increases local demand sufficiently to offset disincentive effects on production; and how can targeting be designed to strengthen local production capacity.

- Research is needed on the effects of alternative international governance rules (particularly WTO disciplines) on food aid flows.

Summary and Conclusions

This paper has examined multiple aspects of the linkages of poor rural households to national and international markets and how to improve these linkages to sustain improved rural livelihoods. An overall conceptual framework for linking smallholders to markets is provided in figure 1, and table 4 provides, in conclusion, some relevant examples of investments and policies that would make markets work better for the rural poor. At the national level, we have emphasized the roles for the public and private sectors in creating the infrastructure and market institutions needed to lower transaction costs and enhance income-generating opportunities for those rural households that are market-oriented producers of cash crops (rural world 1), or might become so if propitious conditions were created by well-designed policies (rural world 2). These market-oriented and potentially market-oriented rural households (especially rural world 1) are also directly affected by the opportunities available in international agricultural markets, which depend on the negotiation of market-access and subsidy restraint through the WTO and regional or bilateral trade agreements. Food aid is another bridge from international to local markets in a direct way, and is a component of the global agricultural economy that can directly affect the most marginalized rural households (rural world 3).

In the discussion of making markets work for the rural poor, we have called attention to emergence of two foci of food production: bulk commodities for which low production and handling costs are critical to being competitive and higher-value products, where the process of production and quality attributes of the final product play a large roles. We have focused on how the production opportunities for these latter products are being affected increasingly in domestic markets of developing countries by the emergence of supermarkets with integrated supply chains, and on how these products are subject to increased regulation in international markets that affects trade. But the distinction should not be overstated: national regulation of food safety and quality is of growing importance in markets in developing countries as well, while international markets have long been dominated by integrated management of supply chains.

To give focus to the examination of these related issues, we have highlighted overarching questions faced by policymakers and the research that is needed to address these questions. In short, two issues arise: how can innovative public and private roles be enhanced in reducing internal transaction costs to benefit agricultural producers and how can multilateral disciplines be strengthened to create international market opportunities. The research needed to advance these two policy agendas is multifaceted. It will need to address economic costs and benefits of alternative policy designs, implementation issues, and even the political economy of determining feasible alternatives.

Table 4. Representative Investments and Policies to Enhance Smallholder Participation in Markets

Type of Smallholder	Definition	Level of access to markets	Description of the type of access	Representative policy relevant issues				
				Internal market development		Regional and multilateral international markets		
				Infrastructure	Institutions	Expanding market access	Food regulation	Food aid
Rural World 1	Globally competitive, market oriented farmers, mainly producing cash crops	Access	Linked to regional and multilateral international markets	-Improved infrastructure development and regulation for international trade (roads, seaports and airport access)	-Commercial rules and laws and commodity exchanges	-Alternative farm policy instruments to minimize barriers -Counter-cyclical support policies	-Assessment of the scope of problems faced due too food regulation that could marginalize their exports	-Not a crucial issue
		Exclusion	Potentially competitive producers facing barriers accessing international markets	-Improved infrastructure development and regulation for international trade (roads, seaports and airport access)	- Fortify producer and trader associations -Management of risk -Vertical integration	-Strengthened WTO, RTAs and preferential access arrangements for agricultural products	-Importance of cost of compliance as a barrier to entry -Legitimacy of safety and quality standards	-Not a crucial issue
Rural World 2	Local orientation, land owners, "shrinky/ messy" middle, farmers able to balance food and cash crops	Access	Linked primarily to local and national markets	-Identify bottlenecks that impede maximum potential of investments	-Understand contract farming and vertical integration schemes	-Mapping from aggregate outcomes of trade agreements to effects on the poor	-Importance of vertical integration arrangements to domestic market standards	-Not a crucial issue
		Exclusion	Potentially competitive producers facing barriers accessing local and national markets	-Identify investment opportunities with largest multipliers to attract private and public investment	-Foster institutional innovations to reduce transaction costs	-Mapping from aggregate outcomes of trade agreements to effects on the poor	-Effect of vertical integration arrangements on market participation	-Design targeting to increase local production capacity
Rural World 3	Subsistence agriculture, only a small part of the harvest is sold to raise cash	Exclusion	Very limited access even to local and national markets	-Institutional arrangements for access to basic infrastructure -Complementarities of investments	-Identify means to override missing markets with public sector interventions -Empower social capital	-Not a crucial issue	-Not a crucial issue	-Advance warning systems -Improve aid administration and targeting

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