Globalization and the Smallholders: A Review of Issues, Approaches and Tentative Conclusions*

*Sudha Narayanan¹
Ashok Gulati²

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¹Sudha Narayanan is Senior Research Assistant, Markets and Structural Studies Division, International Food Policy Research Institute (IFPRI), 2033 K Street, NW, Washington DC, 20006. e-mail: s.narayanan@cgiar.org

²Ashok Gulati is Director, Markets and Structural Studies Division, International Food Policy Research Institute (IFPRI), 2033 K Street, NW, Washington DC, 20006. e-mail: a.gulati@cgiar.org
Executive Summary

A major question that has surfaced in the changing context of world agriculture is whether the smallholder would ride the wave of globalization or be swept away. This paper addresses the debate with a four-fold objective: (1) it maps different factors that are likely to impinge on developing country smallholders in a rapidly globalizing world agriculture (2) it briefly reviews literature and summarizes different approaches and methodology used to study this question (3) it identifies areas which have been the focus of attention so far and those that are relatively under-researched (4) it attempts to chalk out some policy implications based on the literature review.

Observations on Approaches and Methodology

The paper finds that studies that focus on trade liberalization alone (operating through price changes) and those that address broader issues of globalization (such as changing structure of food industry and new relationships in the interface of farm and firm, SPS issues, etc.) have run somewhat parallel to each other where a greater integration the two would be valuable.

Methodological approaches may have something to do with this apparent dichotomy. Modeling, used so commonly in trade liberalization studies, has limited scope in capturing structural changes that typify broader issues of globalization. Qualitative approaches although useful to focus on particular aspects, fail to capture the net impact of the different changes in a rigorous way. It seems that the databased approach (or survey based approach), in conjunction with qualitative studies, offer best scope to assess the predicate of the smallholder.

Importantly, barring a few areas such as short-term impact of price change, institutional and structural constraints, contractual relationships between farm and firm, the paper finds that the smallholder question has not attracted the attention it deserves.

Who are the Winners? Who are the Losers?

An important part of this study was to find out from existing literature whether smallholders have benefited from the globalization process or have been adversely affected. Broadly it emerges that while some smallholders have succeeded in riding the wave of globalization, others have not yet been unable to exploit opportunities opened up by globalization to the extent possible. Noteworthy is the difference across regions. Smallholders in Latin America appear to have had greater relative success in riding the globalization wave than have their counterparts in Africa and Asia. While acknowledging the significant differences even within regions, it is evident that whether smallholders have benefited or have been hurt is determined by a fairly narrow range of issues – vertical coordination with processors or exporters, access to infrastructure and credit, role of public sector and international involvement in capacity building, alternatives available in non-farm sector, etc. The search is then for policies that can successfully address these issues.

What are the Policy Implications?

Based on this, the paper concludes that policy interventions vis-à-vis smallholders should essentially have a twin focus (1) First, on removing the shackles that are currently constraining smallholders from exploiting opportunities that globalization presents and (2) Second, on ensuring minimum adverse impact, both being two sides of the same coin. While the former can be accomplished through enabling policies, the latter would have to be tackled through coping policies.

Particular areas identified as critical enabling factors are greater vertical coordination, removing credit constraints, reducing transactions costs, building social capital, greater role for public sector in providing infrastructure and facilitating institutions and also greater initiatives for international capacity building. On the other hand, coping strategies would include provision of credible safety nets and risk coping instruments, promoting exit options particularly through promotion of opportunities in the rural non-farm sector, guarding against harmful monopolistic competition, and focused research on technologies for small farmers.

Needless to say, the relative importance factor these would vary across regions. It is thus important to identify which battery of policies is appropriate depending on the unique circumstances of each region. It is equally important to draw lessons from the several success stories to be able replicate these successes on a larger scale in a meaningful way. Only then can small farmers make big gains from globalization.
Globalization and the Smallholders: 
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Ashok Gulati

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Ashok Gulati

1. Backdrop

Globalization at least in its narrow economic sense implies freer movement of goods, services, capital flows and technology. The process of economic globalization has been on for a long time with industrial goods taking a lead. This process got a shot in the arm with the explicit inclusion of agriculture under the Uruguay Round Agreement on Agriculture (URAA).

The URAA, with its three “pillars” – market access, domestic support and export competition – has caused considerable concern amongst nations, both developed and developing. In the early years, the focus was mainly on whether and how much the developing countries would benefit from agricultural trade liberalization. More recently however, the focus has shifted to the question of distributional impact of liberalization within nations, notably in developing countries. One major issue that has surfaced is: how would liberalization affect smallholders in these countries? How can their interests be safeguarded in the context of a globalizing agricultural sector? In short, will smallholders ride the wave of globalization or be swept away?

This paper attempts to survey recent studies that evaluate the impact of globalization on smallholders. The objective of this paper is four-fold:

(1) to map the different factors that would impinge on smallholders in the changing context of agriculture in developing countries1;

(2) to briefly review literature and summarize the different approaches and methodology;

(3) to identify areas which have been the focus of attention so far and those that are relatively under-researched; and

(4) to explore policy options available to address the issues of smallholders.

The underlying motivation of the study is that while there has been much discussion on trade liberalization and poverty in general, the smallholder question has not commanded as much attention. Perhaps reflecting this, reviews of literature pertaining to trade liberalization and poverty are many (McCulloch, et al., 2001 Reimer 2002, etc.), as have been those focusing on specific issues – such as linkage between trade liberalization and wages (Wood, 1995 and Slaughter, 1999), globalization and agro-industrialization (Reardon and Barrett, 2000), etc. In contrast, few have put smallholders under the spotlight. This paper seeks to redress this lacuna and surveys extant literature with a different point of departure – namely smallholders.

In order to make the review more tractable and meaningful, the copious literature on poverty (extensively reviewed elsewhere) being not always pertinent to the question of the smallholder has not been dealt with in detail. However to the extent that they may offer useful methodological insights, specific studies have been included this paper. Further, throughout the review, our attempt is to highlight analytical issues that are of relevance so that although methodological details have been discussed, these are not accorded detailed treatment. This review focuses primarily – though not exclusively – on work in the 1990s, particularly after the implementation of the Uruguay Round.

This paper is organized in 7 sections. Following this first section, Section 2 seeks to characterize the smallholders and why they deserve special attention. Section 3 then presents an overview of the debate with a discussion on different factors that operate to shape smallholders’ environment. In Section 4, we outline broadly the methods that have been used to empirically estimate impact of globalization. Subsequently, in Section 5 there is a detailed review of the studies juxtaposed against the issues raised in Section 3. In Section 6, we attempt to identify areas that require more research and comment on the different methodologies. We also draw on what all these studies imply for policy so that smallholders in developing countries gain more than they lose. The concluding Section 7 wraps up the discussion.

1 The question of small farms in the developed countries has also become an important issue in recent times. However, the problem there is so vastly different as to be incomparable.
2. Who are the smallholders? Why are they important?

2.1. Characterizing Smallholders

At the outset it is essential to define what the term ‘smallholder’ means; this is in itself a challenging task, as there exists no precise or universally accepted definition. The term is commonly linked to the size of the landholding or livestock owned. A smallholder would thus normally derive his/her livelihood from a holding of less than 2 to 5 ha - holdings are often less than 0.2 ha and about 10-20 heads of livestock, though it is common to have only 2 or 3.

However, when defined in this manner, a number of problematic issues arise. First, the very notion of “small” changes in different contexts, particularly across different crops. Thus, a small farm in the context of a plantation crop like banana or coffee would possibly be much larger than a small farm that is devoted to cultivating a staple cereal like wheat or rice. Second, it is often more meaningful to denote smallholder agriculture as resource poor rather than merely in terms of size. A critical issue here is whether land in irrigated or unirrigated (or rainfed). A small piece of irrigated land would probably have to be matched by unirrigated (or degraded) land several times its size to be comparable in terms of productivity, other things being equal. The concept of a small farm under this circumstance becomes ambiguous. Finally, it is also important to recognize that the notion of a smallholder varies widely across different regions of the world, since they are defined primarily in relation to the average landholding size in that region. In South Asia, there are as many as 125 million holdings with avg. size of 1.6 ha. And 80% have holdings the size of a football field (0.6 ha)! In Sub-Saharan Africa, farms are relatively larger in comparison with Asia. 96% of the farmers have less than 5 hectares each and over 2/3rd, less than 1 hectare (Dunstan, 2001). In Latin America, small farms are even larger. It is interesting for instance that in several states in India, the land ceiling permitted by law for irrigated land is about 7 hectares – the biggest farm in this group might be categorized as small in Latin America.

Thus, rather than defining the term smallholder, for the purpose of this review, we characterize the smallholder as a farmer (crop or livestock) practicing a mix of commercial and subsistence production or either, where the family provides the majority of labour and the farm provides the principal source of income. It could happen that a considerable number of farmers who fit this description actually possess little land and only a few livestock as compared with the regional average.

2.2. Smallholders are big deal

Given such a characterization of smallholders, the next step is to ask: Why do smallholders matter at all and why should they merit special attention? The fact is smallholders are a big deal. In South Asia alone, small 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 (Gulati, 2001). These are all farmers who rely primarily on family labour and few purchased inputs.

Apart from the sheer mass of livelihoods that depend on small farms, smallholders often account for a large share of agricultural production. Interestingly in Sub-Saharan Africa, they are known to account for about 90% of agricultural production (Dunstan, 2001). In India, they account for an increasing proportion of the food basket and agricultural GDP – farmers with less than 2 hectares were responsible for 41% of total foodgrain production in 1990-91 as against 34% in 1980-81 (Singh and Kumar, 2002). It is also interesting that small and marginal farmers in India possessed the highest share of livestock – 59% of cattle, 56% of buffalo, 67% of goats and 73% of the pigs population in 1998-99. Thus, the welfare of the smallholders has powerful implications for overall agricultural production and therefore for food security as well.

It is essential too at this stage to place smallholders in the larger context of rural poverty (Figure 1). It is possible, for instance, that the urban rich possess small farms in peri-urban regions. This is obviously quite a different case but one that nevertheless fits into the definition of smallholders in terms of size.

Of the estimated 1.2 billion people in the world, who live on less than a dollar a day, 75% of them live and work in rural areas. It is expected that even by 2025, 60% of the poor would continue to be in rural areas. In terms of absolute numbers given that 44% of the 1.2 billion live in South Asia as against 24% each in Sub-Saharan Africa and East Asia and 6.5% in Latin America.
developing regions (East, South, Central and West Africa, Asia-Pacific, Latin America and the Caribbean; excepting Near East and North Africa), small farmers constitute a part of the rural poor (FAO). In fact, in Africa, they account for a majority of the rural poor (estimated at 73%; European Commission, 2002) while in Asia they represent about 49% of the functionally poor. It is important to remember however that there are exceptions.

**Figure 1: Poverty & Rural Population in Selected Regions (1998)**

![Figure 1](image)

Source: *World Development Indicators (1998)*

It is thus evident that smallholders are important – because a large number of livelihoods depend on small farms, because they constitute a large share of the rural poor and because they account for a large proportion of agricultural production. In particular, smallholders merit special attention because unlike other groups of rural poor (agricultural labourers, landless workers, etc.), smallholders make decisions that are much more complex and wide-ranging and are often a much more heterogeneous group.

It is against this broad characterization with its many caveats, that impact of globalization on smallholders in developing countries would have to be evaluated.

### 3. Smallholders in a Globalizing World

#### 3.1. Key Questions

Globalization opens up opportunities for smallholders but also pose some threats. The key questions as far as smallholders are concerned are: What are these opportunities? Can smallholders exploit these? And what are the threats? Can smallholders survive these threats? In particular, there is some concern regarding smallholders exiting agriculture. While, one would expect this to happen in the normal course of development, in the context of globalization and the often cataclysmic changes it entails, it is important to ask why they do so. Do pull factors represented by opportunities in the non-farm sector, notably industry and services attract them away from farming? Or are they forced to quit farming in the face of adverse circumstances (i.e. because of push factors) as a result of trade liberalization? Naturally, these are two very different things; the latter in particular should be of grave concern to policymakers.

... and the Caribbean. Thus, the issue of smallholders needs to be addressed in the larger context of rural poverty, particularly in Asia and Sub-Saharan Africa.

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4 For instance, small commercially oriented farms that draw on family labour growing high value crops such as cut flowers and produce for export or those growing vegetables in peri-urban areas could in fact be counted among the more prosperous farmers.
Going a step further, one has to see what implications this has for policy? Should there be an effort to keep the smallholders on their farms, or should they be encouraged to quit farming? If it is the latter, what are the exit options that can be made available to the smallholder and how can the transition be made smooth? If not, what are the mechanisms that can be devised to protect smallholders who are particularly vulnerable to the effects of globalization? It is important too in this context to determine if these policy levers should merely ensure that small farmers are not disfavoured (vis-à-vis large farmers) or if they should be explicitly supported through special benefits. This is especially critical for regions where smallholders form the backbone of agriculture, and are instrumental in driving growth in the agricultural sector. A broader question relates to how the current political disempowerment of smallholders can be redressed so that they count in decision-making process in developing countries.

Before these questions can be answered, the essential first step is to see in what ways globalization would affect and so far has impacted smallholders across the world.

3.2. The Debate

The debate as to how the smallholder would fare in a liberalized agricultural context has emerged an important issue in recent times and follows basically two strands. On the one hand, there are those who believe that if prices increase in response to liberalization, it would impact favorably on small farmers since they would benefit from higher producer prices and incomes. On the other hand, there are those who claim that since the rural poor are often net-consumers of food, adjustment programmes that increase the prices of tradable commodities (food) would squeeze real incomes of small farmers who are net-buyers. Still others acknowledge that the impact of adjustment or liberalization cannot be determined by looking merely at the consumption bundle or their relative prices in isolation. One would also have to see how price changes affect their production basket. The story gets complicated further when once takes into account the issue of second round effects on wage rates given that many smallholders work on others’ fields. It is thus the net impact on production, consumption and wage income of smallholders that would perhaps shed some light on how they are indeed affected.

Based on these viewpoints, there have been different assessments of the predicate of the smallholder in a globalized setting. While some assert that liberalization has forced the small farmer to “retreat into subsistence” in response to its adverse impact, others are optimistic that increasing trade, particularly in high-value commodities, offers an opportunity for the small farmer to ride the globalization wave.

3.3 Issues

In reality, the process of globalization can impact small farmers in complex ways – both directly and indirectly. Globalization is a multi-dimensional phenomenon – ranging from trade liberalization to cultural and political change. From the point of view of smallholder however, the elements of globalization that are likely to have strong repercussions, and therefore of relevance to this study, can be organized into two broad categories (Table 1):

**Global Drivers:** These refer to factors that have been the driving forces of globalization, like multilateral trading agreements, etc. These have precipitated fundamental and large-scale changes in policy orientation of hitherto closed economies;

**Meta-Trends:** These are changes taking place all over the world, independently of the globalization process yet, shaping the very nature of globalization. These include trends in technology, consumption patterns, structure of agri-business, etc, that occur both globally and also as more localized shifts.

<table>
<thead>
<tr>
<th>Table 1: Global Drivers and Meta-Trends</th>
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<tr>
<td><strong>Global Drivers</strong></td>
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### 3.3.1. Global Drivers

Of all global drivers, **trade liberalization** is the most important and dramatic aspect. The direct impact of trade liberalization is usually through *change in prices* of commodities that have been liberalized – or the *impact effect*. However, it also triggers a whole range of *second-round effects* through factor prices, income, investment, employment and demand linkages.

In the short run, for smallholders producing primarily the importable commodity, their real income change following a price decline of the importable depends on consumption profile – in an extreme case, where they consume only importables it is constant since the effects of price change as consumer and producer counterbalance each other. On the other hand, it falls if they consume some exportables or non-tradables. Conversely, if the household produces primarily exportables then they stand to gain from the price decline for importables, unless they consume only the exportables, in which case their welfare remains unchanged. For those who produce non-tradables alone, the net welfare change depends on the consumption mix (Ingco, 2001; Hoekman, 2001). Things could get even more complicated if there were simultaneous liberalization of exportables and importables (Figure 2).

The effects described above pertain only to the immediate or short-term impact and this needs to be qualified in some important ways. The fact is there are several other important aspects that need to be considered while establishing any link between price changes and welfare effects. These are:

- **whether price transmission** actually occurs – this depends on the mechanism and structure of the distribution sector, government role in marketing and distribution, costs and constraints of marketing, infrastructure, domestic taxes and regulation, and markets for inputs, etc.
- **the small farmer household’s response** to price signals in terms of substitution between commodities in the consumption and production bundle, marketed surplus and labour allocation decisions. These may differ widely depending on the individual circumstance of the household. Among the factors that determine this is access to public services and goods, its demographic profile (labour endowments), access to inputs, credit etc. These could be classified as *institutional and structural constraints*.
- **there are also significant second-round effects** in operation that come from linkages with other non-farm activities within and outside the rural economy. The ways in which second round effects operate are difficult to gauge, primarily because it depends on opportunities available and performance in the non-farm sector.
- **In the long run, there may be less obvious impacts operating through government transfers** influenced by changes in revenue from trade taxes, *incentives* for investment and innovations, *terms of trade changes* etc. (Winters 2000 & Bannister and Thugge 2001, cited in Reimer 2001).

Apart from trade liberalization, other global drivers too have important implications for small farmers. The establishment of **Intellectual Property Rights** under the TRIPS Agreement could affect smallholders’ access to new technologies or they may face higher prices for critical inputs resulting from more oligopolistic/monopolistic seed industry structures. A similar challenge is posed by the increasingly stringent **food safety and quality standards (SPS measures)** in developed countries, which might impinge on smallholders’ ability to exploit opportunities for high-value exports to these countries. Also, the **liberalization of capital flows** is leading to increase in cross-country investment in agri-food industries, leading to, in part, **larger scale of operations** and **growing concentration** in the agri-food chain (inputs, processing, retailing, trading etc.).
3.3.2. Meta Trends

All these global drivers in fact foreground certain basic, perceptible global (and local) shifts, which might be called meta-trends (Reardon and Barrett, 2000). These have emerged independently rather than in response to specific global drivers, but significantly shape the globalization process itself and hence the environment of smallholders. Among these, are general factors like urbanization, population pressure, demand shifts etc. all of which would impinge on the small farmer. Population pressure in developing countries, particularly in rural areas affect landholding patterns; consequently, smallholders could proliferate and their farms could get even smaller. Urbanization and rising incomes have led to shifts in demand away from unprocessed staples to more processed foods (Bennett’s Law) opening up some areas of opportunity for small farmers. Another important trend is the rapid technological changes that are dramatically affecting agro-industries and increasingly the distribution channels from farm to table (information technology, packaging, storing, transport, etc.). Depending on the extent to which these technologies have scale-bias, they would impact smallholders’ environment significantly. Other factors include environmental degradation, particularly in resource poor regions, gradual shift in political economy towards neo-liberal regimes that reinforce trends in globalization and greater cross-country integration.

It is thus easy to see that the question of smallholders in a globalizing world is in reality an extremely complex issue; for the same reason it is difficult to anticipate how the smallholder would fare without in-depth research into all these aspects. Any study that attempts to do so would have to try and incorporate as many of these factors as possible. Against this broad framework for analysis, it would now be interesting to see how existing studies have approached this issue.
4. Overview of Approaches

An extensive survey of literature shows that three broad approaches have been used to study the impact of agricultural trade liberalization (and more generally globalization) on small farmers. There is however considerable diversity in emphasis and methodology even within these categories. These three approaches can be described broadly as (1) descriptive or qualitative approach (2) data based or survey method (3) modeling approach although there are some studies that have attempted to combine different approaches in addressing the issue. These three methods have generally been recognized as those commonly used in poverty and trade liberalization studies (McCulloch, Winters and Cirera, 2001).

Descriptive studies give an account of trade policy reforms and the manner in which it affects rural population, in this case the smallholder. There is a large body of work of this kind ranging from the anecdotal (Anderson et al, 2000) to the more rigorous (Nadal 2000). Typically, studies that are qualitative describe the changes in policy scenario and try to evaluate its impact by comparing the changed circumstance of the smallholder before and after the policy change in question.

The data based approach as the name suggests base their study on data, which may be secondary data or primary surveys. Usually some hypothesis with respect to the link between liberalization (typically represented as change in prices) and incomes of farmers is tested and often complemented with descriptive statistics.

The third approach is modeling. This has become increasingly popular in recent times and often attains a high degree of complexity and sophistication. The modeling approach entails construction of a theoretical framework that captures linkages between trade liberalization and the smallholder – more generally to reflect the conditions of the economy. Its empirical basis derives from the parameters used in the model, which are often obtained from analysis of actual data. This umbrella category encompasses models that vary across several dimensions. For instance, models can be applied to study effects at the household level (say in terms of labour allocation, consumption, nutrition etc.), at the national level (aggregate household welfare, and to address questions of income distribution) or at the global level (to see aggregate welfare at country level or country groups). Models can be static or dynamic, and in its coverage of sectors, partial or general equilibrium. Briefly, partial equilibrium models analyze a particular sector of the economy separately ignoring any likely inter-sector repercussions. However, within the sector they could incorporate several markets and hence be multi-market models. General equilibrium models, in contrast, try to incorporate the effects of changes in prices, output, employment etc. across sectors and would typically represent the entire economy. Even within each of these, there may be important differences in the methodology.

The first two approaches – descriptive and data-based or survey methods – can be thought of as bottom-up approaches, which focus on micro-level details and draw on these to make broader conclusions (Reimer, 2002). Modeling, in contrast, particularly those of the general equilibrium kind, is typically a top-down approach. Drawing on a macro-level algebraic framework of the economy, an attempt is made to capture impact of exogenous shocks to the system on different agents (usually a representative agent). Recent innovations have attempted to marry the two approaches in what is termed a micro-macro synthesis. Given the tremendous diversity in approaches it is natural that they address issues and make assumptions that are equally diverse.

For the purpose of this review, however, to keep the issues in focus, different works reviewed below are organized on the basis of the issues covered rather than the approaches used, juxtaposing these studies against the issues outlined above.

5. A Review of Literature

So far, studies that evaluate the implications of liberalization on poverty in general far outnumber those that focus exclusively on the predicate of the smallholder. However to the extent that smallholders constitute a substantial part of the rural poor, these studies, their methods of inquiry may be of relevance to the question at hand.
5.1. Trade Liberalization

The issue that has been addressed most often is the impact on the smallholder of *trade liberalization* and concomitant *price changes and related second-round effects*. Indeed, this is the most visible aspect of globalization. The methods that have been applied vary widely from anecdotal documentation to elaborate modeling structures.

5.1.1. Assessing impact effect

In assessing impact effects, studies have generally been concerned with two sets of issues: *relative price changes* with trade liberalization and *price volatility*.

**Relative Price Changes**

The impact effect is the immediate short-term consequence of *relative price changes* at the border. In the long run, this could get dissipated, be overturned or exacerbated by second round effects. Essentially, as far as the impact effect is concerned, one can analyze export liberalization (removal of a quota), import liberalization (reducing tariffs, freeing up imports) or still others such as currency devaluation, etc. Two main arguments emerge from studies:

- **If domestic prices are less than export parity prices**, liberalization has the effect to pushing up domestic prices. Qualitative studies addressing this aspect suggest that increase in price of food after external liberalization has an adverse effect on rural poverty since there are a large proportion of net food buyers among the rural poor – as in India and Philippines (A.R.Khan cited in McKay, Winters and Kedir, 2000). This is mostly likely to include small and marginal farmers apart from agricultural labourers. These studies thus contend that since smallholders are typically net-buyers of food, and liberalization would affect them adversely.

- **On the other hand**, *if domestic price levels remain higher than import parity prices*, liberalization would lead to domestic prices declining to world levels. Watkins (1997) for instance, discusses corn production in Philippines after import liberalization where, cheap influx of subsidized yellow corn, which small farmers cultivate for the market as cash crop, destroys livelihoods of these small farmers. Others include Nadal (2000a & b) for Mexico, Rojjanapo (2000) for Thailand, etc.

That these effects are sector-specific is emphasized by Ahmad and Tawang. Ahmad and Tawang in their econometric analysis of Malaysia’s palm oil and paddy sectors. Whereas smallholder palm producers are likely to benefit, rice farmers could see farm incomes decline by 15 to 60%.

Assessing impact effect of liberalization and consequent change in prices requires however that both the *consumption* and *production* of the commodity in question be considered. It is the impact on *net-consumption or net production* of smallholders that would perhaps shed some light on whether they gain or lose. In fact, it is usually the case that even among a certain group such as the smallholders, there may be gainers and losers depending on the individual household’s status either as a net-seller or net buyer. Most qualitative studies do not take this into account in a rigorous manner. The databased studies that do, come up with different prognoses for different countries. For instance, while welfare impacts are positive for rice price increases in Thailand and Indonesia (Deaton, 1989; Budd,1993), they are negative in Madagascar (Barrett & Dorosh).

It is however clear from these studies, that accounting for marketed surplus is important; and as expected there is no unidirectional welfare change across countries – except that an increase in prices affect net-buyers and a decrease in prices affects net sellers. Seen from the perspective of rural poverty, things are even less clear – since the number of poor can reduce but the depth of poverty could increase.

A drawback of this set of studies, is that although they incorporate marketed surplus (and hence the net-buyer/net-seller status) into the analysis, they typically focus on a *single commodity sector*, which is restrictive. In reality, there is a whole range of goods, exportables, importables, non-tradables, both agricultural and non-agricultural in the consumption and production baskets of smallholders. In fact, there is evidence that all over the world, Asia, Africa and Latin America, smallholders may have highly diversified income profiles. Sahn and Sarris (1991), for instance, account for a range of goods produced and consumed and focus on the smallholders in five African countries – Cote d’Ivoire, Ghana, Malawi, Madagascar and Tanzania, but find there is no unequivocal pattern of increase or decrease in real welfare of the rural poor and there is significant difference across countries – there is a mixture of gains and losses. They make a critical observation of the need to have detailed analysis of data on structure of household incomes, consumption bundles, output of smallholders, etc.\(^5\)

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\(^5\) Their study shows that across these five countries, the share of non-agricultural income earned is 13-58% while agricultural income ranged between 39% and 81%. Also an interesting feature is that a very high share of total agricultural income was from non-tradable goods, a major portion of which were sold locally.
The comprehensive coverage of the production and consumption baskets still misses out on two issues: (a) Within the smallholder group, studies often do not distinguish household types; welfare implications may be very different for smallholders with different production and consumption profiles (b) Models of the kind described above do not allow for substitution possibilities in production and consumption in the long run. All in all, the focus on estimating welfare effects of price changes in the short-term and the focus on a single commodity tends to, as Barrett and Dorosh admit, somewhat circumscribe the policy implications of their analysis.

The fact is, **household response to price change is crucial to whether the smallholder benefits or not**. It is expected that in the medium and long term, cropping patterns of small holders would shift to crops whose relative profitability is higher or simplistically to those crops whose prices rise if they are net sellers. On the consumption front, they could to the extent possible substitute between commodities in favour of those whose relative prices decline. In particular, decisions regarding what they produce for self-consumption and what they buy and sell in the market are critical as is the response of marketed surplus. In short, the response to changes induced by liberalization would determine if the smallholder retreats into subsistence or rides the globalization wave.

Studies suggest that either could happen (Barrett, 1998; Nadal, 2000a & b). Barrett (1998) for instance proposes an “immiserized growth hypothesis”, wherein the heightened food insecurity that price increase entails for price risk-averse net-buyers among small farmers actually induces small farmers to increase output possibly through increased application of labour. This is a case of a retreat into subsistence. Somewhat in contrast are findings such as those by Glewwe and de Tray (1988) that the bulk of the poor, rural and self-employed would either benefit from higher farm prices or remain unaffected by of hypothetical price changes for Peru and Cote d’Ivoire.

Household response is something that has been most effectively integrated into several modeling frameworks. Data-based approaches have limited scope for such a comprehensive characterization of household behavior. Agricultural household models on the other hand, offer scope for a formal treatment of household response usually through incorporation of a supply response function, a marketed surplus response function and a consumption function (Singh et al, 1986).

There have been several studies analyzing pricing policies for a number of different countries (Singh and Janakiram, 1986 for Nigeria and Korea; Braverman and Hammer, 1986 for Senegal, Braverman et al, 1986 for Korea etc.; many stress the importance of linking up different commodity markets that allows for substitution possibilities). The findings are again fairly diverse, though many suggest favourable impact. Gulati and Kelly (1999) for instance, use a multi-market (MM) model to study the impact of liberalization on cost of living expenditure on different classes. With trade liberalization and no change in input prices, they find that the cost of living expenditure (on the 7 commodities considered) registers declines. Minot and Goletti (1998) explore effects of rice export liberalization in Vietnam on different household groups through a spatial equilibrium model of 4 commodities and 7 regions. Their model indicates that elimination of export quota of rice would raise average consumer prices by 19% although this varies across regions. The price increase slightly reduces the incidence and depth of poverty (using the Forster-Greer-Thorbecke poverty measures). However there may be increasing inequality among regions and within urban and rural areas.

**Price Volatility**

The other anticipated consequence of trade liberalization is price volatility. Removal of border protection (particularly those like quantitative restrictions) exposes the domestic agricultural sectors to world prices so that greater fluctuations in world prices consequent to trade liberalization get transmitted to domestic prices. For small farmers with limited means to safeguard against downswings, such volatility could push them to the very brink of destitution. Such fears have been articulated in several assessments of the impact effect (Nayar and Sen, 1994, Rojjanapo, 2000 for Thailand; Nadal, 2000 a & b for Mexico, Karanja, 2002 for small coffee growers in Kenya; Barrett & Dorosh for rice prices in Madagascar).

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6 Barrett (1998) found that following far-reaching reform of rice markets, mean national rice prices increased by 42% and variance by 53%. Output growth in response to these price changes was positive, and concentrated (apparently) disproportionately among the small farmers. This was somewhat paradoxical since during this time, data showed deepening rural poverty and deteriorating living standards especially because most small farmers are price risk-averse net-buyers of rice. The explanation, he casts in the form of “immiserized growth hypothesis”, wherein the heightened food insecurity that price increase entails for price risk-averse net-buyers among small farmers actually induces small farmers to increase output possibly through increased application of labour. This is particularly true in an environment of incomplete or imperfect markets. Although Barrett does not venture to test the hypothesis, he demonstrates using survey data (1990 national survey of 825 rice farmers) that this may indeed have happened in Madagascar. Barrett also offers alternative explanations (like technological change in small farmers, migration, etc.) that may result in similar correlations in output and poverty but rules them out for Madagascar. His focus on a single commodity is a limitation.

7 The MM model is characterized by a supply system, an urban demand system, a rural demand system, exports/imports and market clearing conditions. Simpler than the CGE model, it offers more insight than single-market models do by incorporating impact of price changes of other crops as well.
As far as international price volatility is concerned, empirical estimates on international price movements however tend to conclude differently. While prices are volatile, there is no indication that they are systematically linked to trade liberalization. Sarris (1997) observes that in the case of cereals, there appear to be no trend towards greater price instability either inter-year or intra-year. A similar conclusion was reached by Harwood (for corn prices between 1920 and 1996) and Quiroz, Foster and Valdes (who find no systematic difference in variability that would lead us to conclude that liberalization contributes to volatility).

As Valdes and Foster (2002) point out, perhaps more than volatility the problem faced by farmers in developing countries is the prolonged periods of low international prices. For instance, Cashin, Liang and McDermott (1999) observe that low prices endure for more months than high prices. The reasons for this are several, most important of which are developed country policies that offer emergency assistance to farmers when world prices fall. This has the effect of deflecting the downswing in prices back to international markets instead of absorbing them. It is easy to see that under such a situation, small farmers in developing countries have few options to tide over periods of low prices. While there may be feasible solutions for price risk management in the short run (indeed, there have been several success stories in price risk management in developing countries, chief of which is the role of financial markets, which reduce price volatility; Karanja, 2002), they may not help for prolonged downswings in prices. Here what may be more important is the establishment of international disciplines on support to agriculture (trade negotiations under the aegis of the WTO) particularly vis-à-vis developed country support policies.

5.1.2. The Caveats

Assessments of impact effect of trade liberalization, specifically quantitative assessments that use modeling approach, often assume away problems of price transmission and structural and institutional constraints in smallholders’ environment. These can however be extremely important determinants of how smallholders in developing countries fare, and therefore merit special attention.

Price Transmission

Most studies that evaluate the impact effect of trade liberalization tend to assume that price changes at the border are transmitted smoothly right down to the farmer. However, typically in developing countries, there may be a huge difference between the border prices (that is influenced by the government’s trade policy that fixes quota, tariffs, etc.) and the prices faced by the smallholder.

For instance, Quiroz and Soto (1999) conclude based on an analysis of 78 countries that “in an overwhelming majority of cases, transmission of price signals in agriculture is either non-existent or low, by any reasonable standard”. Sarris (1997) too mentions low transmission coefficient of 0.24 and 0.58 in the short and long run. The extent of price transmission varies depending on a range of factors from domestic policies to structural and institutional factors. Models that don’t satisfactorily address this issue may not accurately reflect the true potential benefits and costs of liberalization for small farmers.

Weak price transmission could have two very different effects. On the one hand, rural low-income households may be somewhat isolated from the cash economy – the insulation could protect them from adverse impact of price changes at the border. On the other hand, they could end up paying more for what they buy but not be able gain from higher prices for their output (an asymmetric price transmission) as was observed in Rwanda (Minot, 1998). Or it could be that market power among buyers of produce could effectively prevent net-selling smallholders from benefiting from price rises. Alternatively, as Nadal (2000 a & b) claims, small corn farmers do not benefit from reductions in corn prices as buyers since tortilla industry cartels prevented passing the 50% price reductions to consumers of corn products, although they would still benefit from reduced price if they were to buy corn directly from the market.

Another oft-neglected aspect is that smallholders often sell in a buyers market when prices are low and may buy off-season in a seller’s market when prices are high. In such a case, it is the traders who benefit and not the smallholder farmer. In Malawi, traders have emerged as important players buying food commodities from farmers and selling them to urban consumers or exporters (Parris, 1999).

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8 For wheat, international price shocks have a median half-life of 44 months. There is a probability of 50% that prices prevail below the expected value (declining over time) for more than 44 months.
Thus, when the issue of price transmission is taken into account, the prognosis for the smallholder could be quite different from what models assuming perfect transmission would ordinarily predict.

**Institutional and Structural Factors**

Closely related to the question of price transmission are institutional structural constraints, some of which may in fact contribute to poor price transmission. A burgeoning literature, much of which is informed by a New Institutional Economics perspective, has devoted itself to structural and institutional constraints, high transactions costs of smallholders, particularly in remote regions (See Delgado, 1999, McCulloch, Winters and Cirera, 2001; Kydd, Poulton et al, 1996). These structural and institutional factors may constrain the smallholder in exploiting opportunities opened by trade or intensify the adverse impacts. It is thus important, in the context of smallholders, to know what these constraints are, how they affect smallholders, and what has been the experience of developing countries in tackling these constraints (Table 2).

**Does the small farmer household have access to natural assets?**

Studies suggest benefits from liberalization depend largely on **access to assets** (Dercon, 1998; Watkins, 1997). Disadvantaged households are typically land-poor (and landless) and usually lack access to other productive assets. Under the circumstances, export crop-production per se is unlikely to have substantial benefits for this section.

Watkins (1997) cites the example of Zimbabwe, Brazil, Philippines, and Mexico where stark inequality in land distribution constrains the small farmer. While in Mexico and Zimbabwe, cash crop production that liberalization has encouraged concentration in richer regions of the country; in Brazil, it precipitated land grabbing by rich and powerful farmers leading to dispossessed poor farmers. Delgado (1998) emphasizes that asset deficit problems of resource-poor smallholders must be addressed in a way that improves incentives for market participation, else it could add to transactions cost rather than alleviate them.

**Table 2: Transactions Costs and other Constraints: What is the way Out?**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Constraint</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit</td>
<td>Reliance on informal sources of credit at often usurious rates.</td>
<td>micro-finance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kisan credit cards</td>
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<td></td>
<td></td>
<td>warehouse receipt systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>repos &amp; other financial innovations</td>
</tr>
<tr>
<td>Assets</td>
<td>Limited access to assets: land and livestock.</td>
<td>Initial transfers of capital, livestock, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Streamlining land records, titles.</td>
</tr>
<tr>
<td>Markets</td>
<td>Limited access to markets.</td>
<td>Physical infrastructure, storage, warehousing and transport and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>communication facilities</td>
</tr>
<tr>
<td>Information</td>
<td>Lack of reliable information about markets</td>
<td>Market Information Systems through radio, internet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvements in rural communications facilities</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Poor quality of physical infrastructure (roads, power, irrigation and communication)</td>
<td>Greater and more efficient public spending in critical areas (roads, power, irrigation, etc.)</td>
</tr>
<tr>
<td>Human Capital</td>
<td>socio-demographic characteristics of household; labour endowments, etc.</td>
<td>Social infrastructure – literacy, health.</td>
</tr>
<tr>
<td>Inputs</td>
<td>access to modern inputs and price of these inputs</td>
<td>Seed contracts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interlinking transactions (greater vertical coordination through contract farming, etc.)</td>
</tr>
<tr>
<td>Legislation</td>
<td>Tenancy laws, land ceiling and land lease legislation</td>
<td>Legislative Reform</td>
</tr>
<tr>
<td>Insurance</td>
<td>limited access to insurance for production and price risks.</td>
<td>Crop insurance schemes, commodity exchanges, futures markets, warehouse receipts, etc.</td>
</tr>
<tr>
<td>Technology</td>
<td>limited access to technology</td>
<td>Public sector research on small farm and natural resource management of resource-poor region</td>
</tr>
</tbody>
</table>
Are there physical and infrastructural assets that can help the smallholder exploit opportunities that liberalization offers?

It is a fact that physical distribution costs are of great importance since they drive a wedge between border prices and domestic prices, determining if a good is an exportable, importable or non-tradable. Naturally, this would have very different implications for a particular region that is exposed to liberalization.

On the one hand, transport, marketing and distribution costs could be so high that it insulates a particular region completely from the effects of trade liberalization, they continue to remain in subsistence, cultivating primarily non-tradables. While this offers a certain degree of protection it is not necessarily beneficial, since it also prevents smallholders from gaining from exports, even in intra-national trade (Dembele and Staatz for Mali, 1999, Corn production in Mindanao, Philippines, Oxfam, 1996, etc.)⁹. Sometimes, high marketing costs of food imports into a certain region drives back smallholders to preserve food self-sufficiency. Consequently, cash crops despite having high returns to land and labour may not be a viable alternative for these small farmers (as Jayne, 1994 found in Zimbabwe).

Indeed, it has been shown that poor groups that have benefited from the gains of reform (in food markets, taxation and devaluation) had relatively good land and access to roads and towns (Dercon, 1998 for Ethiopia) and that constraints such as remoteness, lack of inputs etc. prevent the smallholder from realizing potential gains from liberalization (Alwang et al, 1996).

Do the small farmers have human capital?

To some extent this would depend on the socio-demographic characteristics of the household and in turn the labour endowments of the household.

It is possible that if landholdings are larger or more productive or in a larger family, the household can spare a member to work in non-farm activities (Barrett, Reardon & Webb, 2001). Intergenerationally however, large families imply greater fragmentation of landholding, leading to more smallholdings, which are getting smaller, as is happening in India (Singh and Kumar, 2002).

More important is perhaps the education level and knowledge base of small farm households to meet the new challenges and access available scientific and technological services. Literacy has been noted as a critical factor in the adoption of technology, total factor productivity growth (TFP) among others (Fan, et al 1999, Mittal & Kumar, 2000).

Do small farmers have access to inputs, credit, insurance, and information?

Access to modern inputs is often a problem for smallholders, particularly those in remote regions. Since, typically the quantities demanded may be small, private marketing channels may be non-existent in these areas. In the absence of the public sector, other institutional innovations would have to be conceived. Seed contracts for instance is something that has been successfully applied in parts of India. Several NGOs too have been involved in facilitating resource-poor farmers’ access to inputs in developing countries.

A related question in the context of an input constraint is the movement in input prices. For instance, a simultaneous increase in input prices, alongside increasing producer prices could squeeze the profit margins. Thus the input side is important because it can overturn the welfare effects of output price changes by determining the operating margins for smallholders (Gulati & Kelley, 1999). This appears to have been the case with smallholders in Zambia who switched to maize to increase their incomes (Oxfam, 1999).

It has been long known that for smallholders in developing countries, the single major constraint is credit. Informal sector lending at usurious rates predominates, with formal and timely finance out of reach of most farmers.

Typically, poorer farmers in developing countries rely on unsecured loans from both formal and non-formal sources. Lenders often get information about the borrower’s reputation, or the more formal institutions use credit history with the institution itself as a guide for reliability. Traders often act as intermediaries getting wholesale loans from formal institutions and undertaking retail lending to small and marginal farmers. Informal finance has however

⁹ Oxfam (1996) observes that in Philippines, given the low productivity in yellow corn in some parts – Mindanao – and the high marketing costs to deliver produce from farms here to markets in towns like Manila, they would be unable to compete with US corn or Thai corn imports that would be anywhere in the range of 20-39% below domestic prices in the Philippines in 2000-04. About 1.2 million households would be affected and could see their average household income decline by 15% by 2000 and 30% by 2004.
clearly dominated the rural credit scenario in many countries. In the mid-1990s, in Nepal, 81% of rural borrowing was from informal sources, and in Nigeria it was 30% from moneylenders and 40% from esusu clubs (or cooperative credit arrangements). Significantly, within countries, poorer farmers rely disproportionately on informal means of finance. This has emerged from studies in Nepal, Pakistan, India and Thailand (World Bank, 2002).

There is increasing consensus that credit constraints are at the basis of the poor farmers’ weak response to liberalization (Lopez et al, 1995’s study of Mexico; Alwang, et al, 1996, for Zambia). Interestingly, credit constraint also has the effect of keeping small farmers in the labour market in spite of rising cereal prices since wages enabled them to escape the credit constraints (De Janvry et al, 1992).

While some traditional systems have their own merits, ways and means of improving small farmer access to credit has been a major concern of policy makers for some time now and has led to devising new schemes. Several of these have been highly successful - like the kisan credit card scheme in India, repos in Columbian livestock, (See Boxes 1, 2 & 3) – many of these are financially sustainable means of alleviating credit constraints. It is important to learn from these successes in designing such schemes in the future.

A particularly important issue that has been raised in the context of liberalized agricultural markets is insurance. Small farmers are particularly vulnerable to two kinds of risks – production risks (represented by crop failure, etc.) and price risks (greater volatility and extraordinary and persisting low prices). In fact, it has been observed that when faced with risky environments, rural households often resort to selling their assets to smooth consumption. Rosenzweig and Wolpin (1993) point out that in India, livestock is used as savings and sold in times of distress; this was observed to be a fairly successful strategy given well-integrated markets for cattle and stable prices. However, in Burkina Faso, this did not happen – possibly because widespread agricultural shock meant more contemporaneous decision by households to sell livestock and lower the efficacy in smoothing consumption (Fafchamps, Udry and Czukas, 1998). This highlights the need for credible insurance mechanisms.

Formal mechanisms are very difficult to implement particularly in large developing countries or where small farmers are numerous and widely scattered. While crop insurance schemes have been in place in some countries, there is not much information on the degree to which small farmers benefit from this. Where they have failed, they have contributed to the decline of agricultural banks (Seibel 2000 cited in World Bank 2002). Or, as the crop insurance scheme in India demonstrated that it offered considerable subsidies bringing to the fore questions of sustainability. Insurance arrangements in developing countries have tended to be informal often bundling credit and insurance depending on nature and degree of shocks affecting borrowers (as in northern Nigeria, World Bank, 2002).

Implementing price risk management schemes is even more difficult, but attempts have been made in several developing countries. Price risk management instruments range from futures markets and forward contracting (which is more common for non-staple cash crops) through commodity exchanges, warehouse receipts systems (Box 4), etc. Many of these double up as risk management instruments as well as credit instruments and have been happy examples of success.

Another major constraint is information about markets. Typically, smallholders with marketed surplus have to rely on trader information in the absence of other means of communication. Indeed, studies have shown that smallholders often end up selling in a buyers market and as consumers buying in a selling market (Parris, 1999). This is attributable in part to the lack of access to reliable information.

Until recently, public sector systems were not widespread – only 53 systems were identified in a survey of 120 countries (Shepherd, 1997). However, this is changing. In particular, in Africa, with the help of international agencies and national and local governments, there has been an effort to establish Market Information Systems (MIS) that tap modes of communication such as local and national radio, to transmit information on prices, trading volumes etc. in the closest markets (Box 5). Existing research shows that there has been greater spatial integration of prices after the Market Information Systems have been introduced indicating that these farmers most likely have been able to respond to the prices in surrounding regions and presumably based their selling decisions on it (Rashid, 2002 for Uganda). Similarly, in several developing countries the use of the internet as means of communicating market information, often on private sector initiative, is growing. Similarly, the exchange of market information in Ghana, the Philippines and Bangladesh was boosted when governments granted licenses to mobile telephone companies making rural access a condition. Traders have now been able to have their own market information networks (Chaudhury and Banerji, 2001 cited in World Bank, 2002).

The concern here is however: are MIS sustainable? Most MIS particularly have either been funded by international donors or national governments. With the system being contingent on availability of funds, there are problems regarding the long-term sustainability. For instance, in Mali’s older MIS, data collection costs accounted for 64% of the MIS’s operating budget. Ways would have to be found to operate these MIS on a self-sustaining basis.
Box 1: Kisan Credit Card Scheme (KCC), India: A Phenomenal Success

In 1998-99, the Government of India established the Kisan credit card scheme. Under this scheme farmers are eligible for production credit of Rs. 5000 and above issued against a kisan card and a pass-book or a card-cum pass book, valid for 3 years subject to annual review. It provides a revolving cash credit facility with unrestricted number of withdrawals and repayments within the credit limit. Credit limits are fixed depending on need (determined by production credit required for a full year, plus ancillary activities related to crop production), operational landholding, cropping pattern and scale of finance. Each drawal has to be paid within 12 months. Credit limits are often revised to take into account cropping pattern changes, increase in costs etc. There is also flexibility to reschedule loans in case of natural calamity.

As at the end of 31 March 2001, 353 District Central Cooperative Banks, 192 Regional Rural Banks and 27 Commercial Banks were participating in the scheme. Since the inception of the scheme, over 13.4 million credit cards have been issued to farmers by cooperative banks, commercial banks and regional rural banks in that order upto 31 January 2001.

Studies revealed that the KCC Scheme had been generally well received, both by the banks and the farmers. The KCC Scheme has since become popular not only amongst farmers but also among banks. It has smoothened the flow of credit to the farmers overcoming many of the problems arising out of procedural delays in sanction and release of loans. The borrowers’ advantages were in the form of timeliness in availability of credit and reduction in interest burden due to flexible operations, while the implementing banks benefited by avoidance of repeat processing of loan documents every year and improvement in recovery, etc. The Union Budget 2001-02 has set a target to cover all eligible farmers under the scheme within the next 3 years. 

Source: NABARD (2002)

Box 2: India: agricultural credit backed by sales to processors

A recent form of providing credit has emerged in India in the late 1990s. A number of innovative structured finance schemes have been designed by Indian banks as well as equipment providers whereby inputs (say tractors) are provided to farmers on credit to farmers who sell to processing plants, with the reimbursement of the loan through deductions in the payments the processor makes to farmers, which are in turn linked to the credit-making institution. It is too early to call this scheme a success, but on the face of it, appears to be a win-win situation where the small farmer’s access to credit is linked with access to inputs. Naturally, the status of the small farmer as supplier to processing plants is another issue altogether. In this context, another recent experiment in several parts of the world has been with farmers who produce under contract. Here, in return for the assured supply, the farmer is provided an integrated package of services, one of which could be credit.

Source: UNCTAD, 2002

Box 3: Columbia: Repos for Livestock financing

Colombia’s National Agricultural and Livestock Exchange (BNA) structured an innovative livestock securitization programme in 2000. The programme enables cattlemen to obtain financing for the feeding of their cattle. Several series of securities were successfully issued under the programme at rates determined through the competition among institutional investors on the country’s stock and commodity exchanges.

Under the programme, funds for the feeding of beef cattle were raised from local institutional investors through livestock-backed securities offered and traded on the BNA and the country’s securities exchanges. Tight supervision reduced risks for the investors to the minimum. Cattlemen in selected regions who met certain selection criteria signed contracts with a Trust, transferring the ownership rights to their cattle. The Trust then sold securities on the basis of these contracts, and paid the farmers the funds received. To ensure that farmers, working as agents of the Trust, properly fed their cattle, an independent company provided extension and quality control services – and was liable to the Trust if its services were ineffective. The marketing of the cattle was controlled by an independent marketing agent, who was obliged to transfer the funds received to the Trust, which assigned them in priority to the “repurchase” of their cattle by the cattlemen (in effect, most cattle sales were through the BNA auction system). Insurance covers the risk of criminal or terrorist acts. Repos were at the basis of the financing – cattlemen sold their cattle to the Trust, and then acted as agents for the trust, before buying their animals back. Several series of securities were successfully issued under the programme, with strong interest from both cattlemen and investors.

Source: UNCTAD, 2002

Box 4: Pepper in Malaysia: A government Agency as Warehouse Receipt Financing Intermediary

In 1998, Malaysia’s Pepper Marketing Board (PMB) introduced a Warehouse receipt System. Farmers deliver pepper to one of PMB’s warehouses in Sibu, Sarikei or Kuching for storage for between 1 to 6 months. A Pepper Ownership Certificate enables the farmer to sell his pepper to processors, with the reimbursement of the purchase price to the farmer. The use of the Pepper Ownership Certificate has enabled banks to extend credit to farmers. Many banks have linked this source of funds to the Pepper Marketing Board, with the reimbursement of the purchase price of pepper to the farmer.

Source: UNCTAD, 2002

Box 5: Successful MARKET INFORMATION SYSTEMS in Developing Countries

Indonesia’s MIS is widely regarded as a success. Here market prices of vegetables are broadcast daily on provincial radio stations in major production areas. It has been observed that knowledge of market prices and trends enables farmers to negotiate with traders from a position of relative strength. This happens either in their ability to choose certain traders over others, improve their quality of produce or even simply using broadcast prices as starting point for negotiations the following day. In Uganda, the International Institute of Tropical Agriculture (IITA) along with USAID and Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) have established a national level MIS that broadcasts over national radio weekly prices for 28 commodities in 19 districts. This is supported by analysis and other relevant information like the transport situation, markets turnover and number and types of buyers. This has resulted in greater integration of prices across markets reflecting regional trade, which might have been absent due to lack of market information. In Mali, 1999 saw decentralization of the existing MIS and the creation of 22 local offices in addition to a central office. Information on markets is thus now transmitted locally through 24 local radio stations on crops of regional interest. The source of funding has also seen a change from dependence on PRMC (Cereal Market Restructuring Program) donor funds to full financing by the Government. The MIS in Mali is on the verge of extending into electronic commerce for food crops. Similar MIS with marginal operational differences exist in Zimbabwe (on national state-owned radio) and Mozambique (local stations against payment) as well.

Source: Shepherd (2002)
are also likely to have an impact in some cases, in others it has had beneficial impact on small farmers.

Where competition has been fostered among private traders with the withdrawal of the state, it has helped farmers secure higher prices for their output as was the case of Zambia where state milling was replaced by private mills (Oxfam-IDS 1999 and Winters, 2000). A similar situation occurred in Zimbabwe as well. Whereas under monopolistic procurement of cotton by the state forced down prices (to provide cheap raw materials to the textile industry), withdrawal of the state resulted in three competitive buyers who as a result offered more remunerative prices to the farmer. Quite apart from the effect on prices, private grain trade has also fostered better geographical distribution of grains, particularly improving grain availability in deficit areas (Tschirley et al 1999).

Equally however, there have been instances where domestic market reforms have hurt. Oxfam-IDS (1999) and Winters (2000) mention the instance of Zambia. Small farmers in isolated areas had benefited from the official purchasing organization through pan-seasonal and pan-regional pricing. With liberalization, it was replaced by private buyers who possibly colluded and stopped purchasing from these farmers altogether. These farmers hence had no access to the market whatsoever.

In another vein, Butawega and Awori (1998) point out that there seems to be some evidence that the African governments tend to support large farmers in horticulture and flower production rather than the small farmers. As a result smallholders in Kenya may not really benefit from export-led agricultural production that motivates post-trade liberalization agriculture in developing countries.

Constraints could also come from institutions of different kind namely legislative frameworks. These could refer to land ceiling laws, tenancy laws etc. Legislation is an oft-neglected aspect and could pose problems particularly in terms of exit-options that it has for small farmers to move from agriculture to other sectors (if indeed opportunities are available here). Once such problem is the tenancy laws. In several countries, laws favour the agricultural tenants over the landlords for obvious reasons. It is possible that the small farmer would decide to lease out land to a big farmer and choose to work as an agricultural labourer instead if the wages are attractive enough. These tenancy laws would then begin to have a counterintuitive effect, where it protects the large-farmer-tenant. This is known to act as a major deterring factor for small farmers to reallocate their labour. Also, to the extent that the small farmers may be willing to give up the land (if there is alternate employment), land ceiling laws typically prevent development of agro-industry. While land ceiling laws themselves may be effective instruments of equity, viewed in this context they are in fact constraints. This was found to be the case in Peru where agro-industries that offered tremendous scope for generating employment were unable to expand the operations to the optimum size (Escobal et al 2000).

Given the importance of institutions, it is central to any discussion of the small farmer, and needs to be addressed explicitly apart from the usual price and output changes. Trade liberalization studies often make facilitating assumptions that tend to undervalue the major role played by these constraints in limiting ability of smallholders to take advantage of opportunities. The review of studies shows that this are deserves much attention. The upshot of different studies is that despite the many constraints, several countries have designed and implemented schemes to overcome these constraints and happily with much success. It is important to replicate these successes to enable smallholders ride the wave of globalization.

5.1.3. Incorporating Second Round Effects: Factor Earnings

So far, the focus was on assessments of impact effect and evaluation of some of the institutional and structural constraints that are often neglected in these impact studies. By its very definition, impact effect is a short-term concept and its effects could get dissipated and even overturned in the long run, through second-round effects. For the smallholder, second-round effects of liberalization can have a powerful impact. These operate primarily through linkages between various activities within rural economies although in the long run linkages with urban sector are also likely to have an impact. Other linkages include direct upstream and downstream production linkages, investment linkages and indirect consumption (or expenditure linkages). Delgado et al (1998), Kydd et al (2001) and McCulloch, Winters and Cirera (2001) review these aspects at length.

It has been established that multiplier effects in rural areas of agricultural incomes are very high. While in Asia a dollar increase in agricultural incomes resulted in an additional 80 cents for non-agricultural income for local enterprises, for selected countries in Africa it was estimated to be over two dollars (Delgado, et al 1998). Hazell and Hojati (1995) found that the often prohibitive costs of trading in many rural areas in developing countries implies that much of the multiplier effect is driven primarily by household consumption demand and production linkages predominantly within the rural farm and non-farm economies.
Of these, factor earnings is of most relevance to smallholders and hence the focus in this paper. Factor earnings have come to be acknowledged as a critical component in assessing welfare impact of trade liberalization (Reimer 2002). Even if small farmers were to lose in the short run (with benefits cornered by larger farmers), in the long run, they could benefit from farm and non-farm activities through greater employment opportunities. This could happen either through (1) greater aggregate employment or more gainful employment or (2) higher wage earnings, which could come from rural on-farm wages, rural non-farm incomes and also urban earnings. Naturally, this is contingent on the factors that may affect the non-farm sectors independently of the agricultural sectors.

In the context of the smallholder, income from on-farm employment is an important segment. Consider on-farm income from agricultural wages. If higher food prices were to stimulate food production, which increases demand for agricultural labour this could push up wages. Under such circumstances, while net-buyers of food would be adversely affected by food price increases in the short run, given that most supplement their farm incomes with agricultural labour earnings, they could gain through wage increases over a longer time period, highlighting the need to gauge the responsiveness of wages with respect to (output) prices (Warr, 2001; Ravallion, 1990; Rashid, 2002)\(^1\). Rural non-farm income too often constitutes an important source of income. Existing data suggests that non-farm income may be more important for Latin America and Africa than in Asia. In the late 1990s, in Latin America, on an average, as much as 46% of rural household income of selected countries came from non-farm sources (with a weighted average proportion of 40%). The proportion is close to 45% in Africa and a lower 35% in Asia. The interesting finding is that this share may be increasing, particularly in Latin America both in absolute and relative terms\(^2\).

Apart from income from rural non-farm employment, urban wages can also be a significant part of smallholder income. For instance, seasonal rural-urban migration is common among small farmers in many developing countries who often go to cities and join the pool of casual labour. Such migration may be more common in Asia than in Latin America or Africa (where contrary to popular belief migration income is far outdone by non-farm incomes; Reardon, Berdegue and Escobar, 2001). In Asian countries such as China, part-time farming is widespread, while in India and Thailand, urban centres are receptacles of seasonal labour from the countryside. This would necessitate of widening the scope of factor earnings to include both off-farm income in the rural sector and that in urban sector.

As far as empirical studies on liberalization that factor in these linkages are concerned, it is evident that the issue of non-farm income is far more complex than agricultural wages. Rural factor markets have been effectively integrated into what have come to be known as multi-market models, which extend the basic agricultural household model to several commodity markets and allow rural wages to be endogenously determined (Barnum and Squire, 1971, Smith and Strauss, 1986; Braverman et al, 1986; Gualti and Kelley, 1999). These offer a more complete treatment of the link between prices and rural wages. The enriching of models to include non-farm sectors (rural and urban), on the other hand, culminates in general equilibrium modeling (Computable General Equilibrium modeling) that captures not only rural non-farm linkages but also economy wide linkages. These models are sensitive to the assumptions made regarding closures, specification of relationships and the number of representative agents identified. Given the diversity in the models, the predicted outcomes of policy shocks representing liberalization are equally diverse. However, the major findings are:

- When trade liberalization alone is undertaken, it often has adverse impacts for the rural poor. But when complementary policies are also undertaken simultaneously, it has the potential to overturn adverse impact. These models thus emphasize the importance of complementary policies (land redistribution, self-targeted rural works programs, restructuring of government expenditures and taxation, etc.).
- When rural households have highly diversified income, they are less prone or vulnerable to shocks. This clearly points to the importance of the different sources of income.

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\(^1\) This price-wage linkage was found to be true in the case of Thailand (Warr, 2001). In a study of a proposed rice export tax, Warr (2001) found that the resultant decline in domestic rice prices would also drive down wages of unskilled labour, which is employed extensively in the rice industry. The outcome for the rural (and urban) poor who derived 40% of their income from unskilled employment is interesting – the consumption benefit of a decline in rice prices was outweighed by a negative income effect of driven down unskilled wages.

\(^2\) A study of several Latin American countries (Chile, Colombia, Costa Rica, Honduras, Mexico, Panama, El Salvador), rural non-farm employment has been increasing both in absolute and relative terms. In Ecuador, from a share in rural employment of 20% in 1974, by 1994, those in the rural non-farm sector had risen to 36.4%. 

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• It is possible that apart from (or rather than) changes in wage rates, with trade liberalization, there may be overall positive effects on employment. This is interesting in light of the possible exit options smallholders have.

While these results from modeling exercises are instructive, it is essential to go beyond mere numbers and see what motivates the rural poor to diversify their sources of income.

**Why do smallholders diversify?**

What drives rural households to participate in non-farm activities? Are push factors at work? Or do pull factors dominate? It is immediately obvious that the two imply very different things as far as the welfare of smallholders is concerned. Studies in Africa and Latin America suggest that although rural non-farm income and employment are important for both, in Africa they tend to be driven more by push factors and in Latin America it is more on account of pull factors (Reardon, Berdegué & Escobar, 2001; Barrett, Reardon and Webb, 2001).

Interestingly there is in operation what might be called a “meso-paradox”. Households in resource poor regions are driven to diversify their income profile, but their capacity to develop non-farm activities is weak and given their low skills are less likely to corner the better opportunities, instead crowding into low-productivity, low-pay jobs in the non-farm sector\(^\text{13}\). The dynamics of smallholder livelihood strategies needs special attention and it is unlikely that models studying trade liberalization however sophisticated manage to capture this in all its complexity.

It is evident from the above survey of works that trade liberalization and its impact on smallholders (and more generally the rural poor) has attracted considerable attention. Interest in how these global drivers and metatrends impact specifically on the smallholder has, by comparison, surfaced only recently. For smallholders, issues such as Intellectual Property Rights, food safety concerns, foreign direct investment and growing concentration in food industries and technological advances are the most critical. These are taken up one by one in the following sections.

### 5.2 Intellectual Property Rights

Intellectual Property Rights have figured prominently in recent discussions on globalization and technological progress as a result of the Agreement on Trade Related Intellectual Property Rights (TRIPS). Less discussed are its implications for small farmers across the world.

Even while encouraging innovation and research in the private sector, it is widely recognized that the private sector focuses on “widely transferable or profitable near-market technologies” (Pardey and Wright, 2001). Given that much research, which has high social payoffs, may not be profitable to private parties and would remain neglected if public research does not fill this vacuum. It is possible to think of research on technologies that would help resource-poor small farmers as belonging to this domain.

At another level, technology protected as intellectual property is now highly concentrated in a few large multinationals based in the West. This could have two distinct effects. Ironically, even while promoting private investment in research, it could prevent public sector and non-profit researchers from accessing developments in the private sphere (Pardey and Wright, 2001). Although there has been much discussion on how this would affect the flow of resources and how these change power relations between players – public sector agricultural research organizations and multinational\(^\text{14}\) – few have studied the other important implication of such concentration in the seed industry for small farmers. For the smallholder, the important question is whether with seed industries becoming more monopolistic, do the seeds become more expensive than before? Or is the farmer’s choice of available seeds more restricted? If this indeed is the case, then it might be necessary to use trade and competition policy instruments to offset market power granted to right holders (Maskus, 2001).

On the other hand, if it is conceivable that the small farmers too patent their traditional varieties and there is some sort of benefit sharing it could encourage the small farmer to innovate. Similarly, it is possible that if IPRs do indeed promote innovation there could be enough positive feedback to small farmers in terms of productivity increases to counter the effects of increased seed prices. However this would be in the long run and are issues that have not been documented so far although instances of private sector initiatives do provide some possibilities (Box 6).

\(^{13}\) For detailed discussions on this and its policy implications see Doward, Kydd, Cadisch (2001), Barret, Reardon & Webb (2001), Reardon, Bedegeu & Escobar (2001).

\(^{14}\) Lesser et al (2000) for instance discuss the links between agricultural biotechnology, IPRs, national research organizations and the multinationals.
Box 6: Building capacity to Manage Intellectual Property in Developing Countries

One way to ensure IPRs maintain incentives for innovation but do not restrict access to new technologies in developing countries is by building capacity to manage intellectual property.

Examples of this do exist. The Kenyan Agriculture Research Institute (KARI) and Monsanto established a partnership to develop virus-resistant sweet potatoes, with Monsanto providing royalty-free licensing of intellectual property, direct funding, basic research components, and technical assistance for KARI to develop and test the product in preparation for its release in 2002. In Mexico a multi-national corporation contracted to sell intellectual property to large-scale farmers in the lowlands but donated the technology to small, poor farmers in the highlands.

In both cases, the private firms enhanced their public relations image at little opportunity cost, since neither Kenyan nor highland Mexican farmers would have purchased the technologies without the donation.


5.3. Technology

That agriculture has become a hi-tech industry has been recognized for some time now (Josling 2001). Under the circumstances, the implications for the small farmer in developing countries of the fast pace of technological progress cannot be underestimated. Already, bio-technological advances dramatically affect farm-input industries (ex. seed, chemicals) and increasingly, the distribution channels from farm to table (information technology, packaging, processing, storing, transport etc.). Downstream, improvements in transport, storage (ex. chemical applications to reduce fungus formation) and packaging technologies have fashioned growth of capital-intensive agro-industries in the wholesaling and retailing sectors. Such advances have triggered growth of agri-food sectors including apples and pears in central Chile, vacuum-packed milk in Brazil and shrimp in Ecuador (Reardon and Barrett, 2000). Upstream, use of sophisticated equipment etc. that improve product-quality, reduce labour demand and ensure consistency in quality has expanded significantly. The key questions in this context are: Do these technologies have scale bias? Even if they are scale-neutral, can the smallholder afford and access these technologies?

Does technology have scale-bias?

While on the one hand, adoption of higher yielding cross-bred cows has greatly increased smallholder milk output in India (Candler and Kumar, 1998) and Ethiopia (Holloway et al, 2001) implying that technology need not always crowd out smallholders through substitution of capital for labour, there is also evidence that an increase in the share of processed products in the agri-food sector implies increase in the capital labour ratios (Ehui and Delgado, 1999). This could mean small farms or firms would be crowded out by the larger businesses, which presumably are able to reap the economies of scale offered by technological advances.

Given such contrary evidence, it is difficult to determine the impact of technology on smallholders. Generally while biotechnology could be regarded as scale-neutral, other kinds of mechanization technology could have scale bias in favour of the larger farmers or those who are financially more capable. For instance, an improvement in transport and storage technology by changing the structure of downstream activities possibly impinges on smaller players (USDA 2001). Adoption of such technology can be exclusionary vis-à-vis the small farmers. In particular, with respect to transport (freight, etc.) of high-value export commodities organizing the logistics through a group to make up volumes could be necessary (UNCTAD, 1999). In addition, technological advances such as dehydration techniques for vegetables, small-scale processing machines for cassava that may be scale-neutral (al Hassan, 2000) would have to be developed.

Do smallholders have access to technology?

The important issue here (as with biotechnology) could be the access to technology rather than the technology per se. Studies have shown that where technology is appropriate to their resource base and constraints, speed of adoption is not significantly different between small and large farmers. In fact, it is particularly rapid when such varieties are suited to small farmers in terms of yield, low inputs, risk etc. (See Longhurst 1987, Lipton and Longhurst 1985, Barker and Herdt 1984 cited in Cornia, et al, 1987).

Limited access may be due to either of three causes (a) whether technologies are available in the first place for crops of interest to smallholders (b) failure of extension of technology, or reduced government intervention in dissemination of technology (Reardon et al 1999 in Africa, Schejtmman, 1998 in Latin America) or (c) quite differently due to lack of financial capability of smallholders particularly when many complementary purchased inputs are required. While the latter can be addressed by tackling the credit constraint, the former would require institutional arrangements. The public sector research institutions have an important role to play too, not just in research but also in frontline demonstrations of technology, providing training, extension services, etc. Here again, there have been instances where private sector has stepped in to provide extension services, enabling farmers’ access to quality services.
5.4. Demand Shifts, per capita incomes and urbanization

It is well recognized that growing income, urbanization, demographic shifts, improved transportation and evolving consumer perceptions regarding quality and safety are changing the structure of food consumption patterns globally. Of these, income growth and urbanization are the chief factors for these shifts in developing countries while, in developed countries, food quality, safety and health considerations are becoming increasingly important.

For instance, in the United States alone, the share of red meat in total meat consumption fell from 79% in 1970 to 62% in 2000, with poultry increasing from 21 to 38% in the same period reflecting health concerns. Per capita consumption of fruits and vegetables increased by 25% in the 20 year period 1977-99 (USDA, 2001). A related phenomenon is the growth in demand for organic food in these countries. In developing countries, there is a clear shift away from unprocessed staples to higher value and processed commodities such as fish, dairy and other meats, driven primarily by increasing per capita incomes (Bennet’s Law) and as some would emphasize urbanization and associated lifestyle changes. This has been documented extensively (Regmi, 2001; Kumar, 1998 for India, Huang and David, 1993; Wu, 1999). Consumption in high-value food products has thus been growing rapidly in developing countries since the 1980s, more so during the 1990s.

While changing demand patterns are altering production patterns in agriculture in several developing countries, this also opens up greater opportunities for trade, made possible by advancing technology in processing and transport as also greater trade liberalization. Reflecting this basic demand shift is the expansion of trade in high-value food products at rates faster than traditional agricultural commodities (Cranfield, et al, 1998). It is precisely this feature that is seen as an opportunity for developing countries to venture into processed food exports in a big way (Athukorala and Sen, 1998). Indeed, fish exports have also become an important export for developing countries to developed country markets (it now often exceeds the combined value of net exports of coffee, tea, cocoa, bananas and sugar; Delgado, Minot and Wada, 2001). In the case of fish and poultry, trade expansion has outpaced growth in production.

More importantly, this has been recognized as an important opportunity for the smallholder to participate in high-value agriculture and gain from growing trade (Delgado, 1998). In particular, there is now much scope for peri-urban production of high-value agricultural commodities. It is perhaps difficult (or maybe too early) to see how exactly these meta-trends have affected the smallholder, excepting that it offers both an opportunity and a challenge.


15 Reardon and Barrett (2000) also suggest that increasing female participation in labour force increase the demand for processed and prepared foods.

16 Indeed, Cranfield, et al. (1998) show that income effects on food consumption have contributed significantly to the changing structure of world trade. Using a GTAP model, they observe that the largest shift in trade occurs in developed countries (in favour of processed foods) and Asia’s NIC (newly industrialized countries). In most other countries, like China, the dramatic shift in consumption patterns domestically has not translated into external trade, at least not yet.

17 The role played by general trade and macroeconomic policies in agro-industrial exports of developing countries is elaborated in Diaz-Bonilla and Reca, 1999.
5.5. Foreign Direct Investment and Changing Structure of the Food Industry

Even as these meta-trends influence the food industry in developing countries changing the structure of food industry, globalization has had a more direct influence in shaping the food industry\(^\text{18}\). One of this is through Foreign Direct Investment (FDI). Concomitant to free trade in goods and services, there has also been a significant shift in country policies with respect to investment. Traditionally, countries tended to see foreign investment as an infringement of national sovereignty. With more open policies with respect to foreign investment, FDI inflows have influenced pace and nature of agro-industrialization (Gopinath and Bolling, 2000). There is a corresponding (and reinforcing) push factor too at work: With saturation of developed country markets and limits to expansion imposed by regulatory constraints (such as anti-trust laws), developed country food businesses see foreign investments as a promising strategy to expand operations. This has been particularly true of wholesaling and retailing firms (see Handy et al 1996 for a discussion on the US food industry). While initially transnational investment confined itself to developed countries, developing countries are increasingly seen as promising destinations – they now represent one-quarter of US firms’ FDI in food processing globally.

FDI are double-edged – where they are in the form of fresh investments, they serve to generate employment and income to the extent that they do not put domestic firms out of business. Even when they are essentially takeovers of existing firms, they remove capital constraints for domestic agro-industrial firms (as in Malaysia, Argentina and Slovakia; Gopinath and Bolling, 2000; Gow et al 2000), and result in transfer of technology or in spurring innovation (Wie and Chow, 2000 elaborate on the Chinese experience).

However, FDIs could also result in concentration of global market power and repatriation of profits. Thus, closely related to growing cross-country investment in the food industry is the increasing concentration of market power at all levels, processing, trading, wholesaling and retailing. That this has been happening for sometime in the developed countries is well documented (See for instance USDA). In fact this trend is so prominent that it has even merited literature on the interplay of competition policy and agricultural trade policy (MacLaren and Josling, 2000). What is interesting however is that this phenomenon is not unique to developed countries. Recent research shows that Latin America has seen a dramatic change in this sphere. In the 1990s, the share of retail sector controlled by supermarkets increased from 20% to 80%, in Central America this figure was between 20 and 35%. In Brazil, the top 10 supermarkets control an increasing proportion of retail trade – from 23% in 1994 to 44% in 1999, while in Central America a single firm controls 60% of chicken purchases (cited in Vorley and Berdegue, 2001). The Thai conglomerate CP is an excellent illustration of this (Goss et al). Increasingly, firms are going in for worldwide or region-wide strategies (as for MERCOSUR, Jank, et al, 2000).

What are the implications for small farmers?

As Reardon and Barrett (1999) point out the assessment of how smallholders might be affected by the nature of agro-industrialization depends on the following factors. First, there may be organizational and institutional structures that explicitly include (and promote) smallholder participation (clustering, cooperatives, private management companies). Second, higher capital labour ratios in producing industries may not necessarily augur ill for the smallholder, particularly if access to external or expansion in domestic markets engineers large increases in output and thereby employment. Third, in developing countries, where cheap labour is crucial to global competitiveness, agro industries might choose to maintain high labour-output ratios that have positive impact on employment.

With concentration and growing scale of agri-food businesses, vertical coordination or integration is increasingly regarded as key to successful participation by smallholders, particularly in high-value agriculture. A substantial number of works in this area, informed by a New Institutional Economics perspective, have discussed the emergence of new institutional innovations and arrangements to deal with this most notably, cooperatives, clustering and contract farming (Appendix 1).

While such vertical integration is desirable, the main concern with such trends is that even this transition to a vertically integrated or co-ordinated ‘demand chain’ might be exclusionary vis-à-vis the small farmers, with buyers contracting with larger farms or firms that can meet their demands with lower transactions costs and risks (See Carter and Meshah for Chile,1993, Escobal, 1999 for Peru’s asparagus industry, Key and Rusten in Mexico). Studies suggest that whether the smallholder is involved and benefits from contractual ties with the agro-industry tends to be situation-specific and highly variant with no inherent bias in either direction.

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\(^{18}\) Some interesting issues regarding trends in the food industry are addressed in Josling (2000).
To ensure that these institutional arrangements are indeed beneficial to smallholders, studies point to the need for a referee – a role that can be played by independent regulatory bodies or arms of the state or civil society (Vorley and Berdegue, 2001). Also, as most studies indicate, governments could, indeed ought to play an important role to foster smallholder participation in the food industry by providing the necessary asset base, infrastructure etc. to reduce high transactions cost that constrain them (Holloway et al, 2000, Delgado 1998, Escobal et al, 2000) and a credible enforcement mechanism. The other set of issues that must be addressed is the effect of emergence of agro-industries on aggregate employment, rather than a narrow focus on its sourcing of produce. As mentioned above neither an increasing capital intensity, nor emergence of large-scale agri-businesses have any inherent anti-smallholder bias if they generate positive net gains in employment. It would be useful, in that case, for policy makers to provide an enabling environment for growth of agro-industries.

5.6. Food Safety Concerns and Quality Standards

Food safety concerns and quality standards are increasingly seen as something that would restrict smallholders’ ability to exploit opportunities opened up by trade liberalization within the AOA framework.\(^{19}\)

The emergence of standards can be attributed to two broad trends. First with an altering food industry structure, imposition of product quality and safety standards, grades and technology by the industry on farmers has emerged in response to consumer perceptions of food quality and safety mainly in developed countries. This trend is however increasingly apparent in developing countries as well such as the adoption of grades and standards in MERCOSUR (Farina & Reardon, 2000). Second, the signing of the Agreement on SPS measures as part of the Uruguay Round has catalyzed food safety issues into the limelight. It affects developing countries in 2 ways – First, it may be difficult for developing countries to prevent imports that don’t meet domestic SPS standards because of weak institutions, legislation and enforcement. Smallholders may have to contend with that. Second, and more problematic is: given that SPS standards of developed countries are very high, how can the small farmer (a) meet the standards and (b) prove that the standards have been met. Achieving both could increase costs of production of export crops in developing countries.

The problem for the smallholder is multi-faceted: Can small farmers meet these costs? Are there institutions that will help them meet it? Apart from the fact that the small grower would have to meet the stringent SPS standards, it is worth noting that some of these standards directly impact on the production process and the methods of production (pesticides). A further complication is that given no consensus or universally applied standards, there is a fragmented system of standards, so that the small grower who exports would have to tackle different standards in different markets. Would they have the necessary information and the capacity to do so? Yet another aspect of this issue is whether in the face of unreasonably stringent SPS standards that are used as non-tariff barriers to trade, what are the chances that the smallholder has recourse to dispute settlement mechanisms? Can small farmers organize themselves so that they are empowered to act in national and international fora in case of trade disputes?

Attempts to gauge the effect of these SPS barriers have focused chiefly on quantifying the extent or volume of trade that is affected.\(^{20}\) There seems to be unanimous agreement that SPS standards in developed countries do pose major constraints to developing country exports. It is noteworthy that these should be particularly significant in high-value commodities and fresh food products, which are seen as key areas for smallholder participation.

\(^{19}\) Broader issues on SPS get excellent treatment in Jensen (2002), which offers a developing country perspective of the agreement, Josling (-) of measuring the impact and Bureau, et al (1999) of trade considerations and SPS. See Henson et al (2001), which surveys developing countries to identify problems in coping with SPS standards and the issue of developing countries’ ability to participate in setting international standards, which are equally important.

\(^{20}\) Thailand for instance had been involved in 21 SPS disputes with her trading partners since 1995. Similarly, the loss from a 1997 ban by EU on shrimp exports from Bangladesh was estimated to be US$14.6 million (35% of the export earnings from shrimp in 1996; Cato and Don Santos, 1998). A set of studies (Wilson and Otsuki, 2002; Wison and Otsuki, 2001 and Otsuki, Wilson and Sewadah use econometric methods (more specifically a gravity model) to generate outcomes of SPS regulation in developed countries on developing country exports. They find for instance, that the new EU standard for aflatoxin in food imports (as against the less stringent international standard), which reduces health risks by about 1.4 deaths per billion per year, would reduce African food exports to EU by 64% (or US$ 670 million). Muata and Nyamandi (1998) find that close to 3/5ths of the countries that responded to a survey, indicated that some exports had been rejected within the previous two years due to failure to comply with importer-standards because of contamination – microbiological and otherwise – and spoilage.
However, issues surrounding the cost of compliance with standards and how it constrains the small farmer from participating in global trade, which is really the crux of the problem, has not been studied in great detail so far. One study that focuses on this issue suggests that in Kenya and Zimbabwe, there has been a decline in smallholder production. Whereas in 1992, close to 75% of fruit and vegetables were grown by smallholders by 1998, four of the largest exported sourced only 18% of produce from smallholders (Dolan & Humphrey, 2000). In Zimbabwe, the five largest exporters sourced even less (only 5%) from smallholders. However, it is also true that in these countries there have been instances where smallholders meet quality requirements of the UK market. In both cases, exporters are known to have been responsible for organizing growers, arranging finance, providing technical support and ensuring traceability. The role of the exporter is important since supermarkets in the UK tend to prefer concentrating their grower base rather than sourcing from small farmers for reducing their own risk (Dolan and Humphrey, 2000).

Of other studies that have gone beyond quantifying the losses on account of bans resulting from SPS issues, Cato and Don Santos(1998) is important since it surveys the supply side constraints in complying with these standards. In a study of shrimp exports in Bangladesh which were banned by the EU in 1997 on account of hygiene standards in processing facilities, they find that technology, sanitary facilities and processes and trained manpower did not keep pace with the rapid growth of shrimp exporting industry since the 1970s. Inspection procedures were ineffective since testing centers and inspection facilities were limited. Similarly, the FAO analyzed detention records of the US in 1996-97 and point out that often detentions were on account of basic types of food contamination (by insects, rodent filth and microbiological) rather than highly technical or sophisticated requirements (FAO 1999). While the FAO suggests that dealing with such problems is well within the means of developing countries, Muata and Nyamandi (1998) suggest that financial and technical support for establishing testing and inspection facilities must be provided in exporting countries. Finger and Schuler (2000) suggest that given the financial constraints faced by developing countries and the past experience of the World Bank in building capabilities in this area, the financial resource requirement could equal the annual development budget for most developing and transition economies. Other factors that acts as constraints include lack of information on SPS regulations, limited reaction time to alter production processes in response to SPS notifications, fragmented standards lack of expertise, etc.

Either way, it is not clear at all that the smallholder would have either the financial capacity or access to institutions that would enable them to export high-value products to developing countries in the face of high standards. It is also inconceivable that the smallholders in developing countries could tap technical, scientific and legal capacity in these developing countries to voice these issues in national and international for a, let alone defend or initiate dispute cases that are so dominant a vehicle for resolving these SPS issues. Even while emphasizing the role of international agreements like the SPS and TBT, it is important not to underestimate domestic forces that have precisely the same effect. In several developing countries, urban consumers are becoming increasingly conscious about food safety and attributes such as organic cultivation, etc. These can only become more marked in future and would have similar implications for small farmers.

The solutions for the small farmer are often recognized as lying in vertical coordination. Different models exist – MNCs which tightly control production for export to high-income markets (vegetables in Kenya for UK markets), contracting with larger firms, small farmers coordinated by exporting firms that provides guidelines for meeting these standards (as is the case of fruits cultivation in the Ivory Coast for the EU market), or production being contracted to small farmers by the larger agro-processing firms. Each of these raises issues that have been elaborated in the previous section on institutional innovations on the firm-farm interface.
The role of the public sector and international cooperation assumes critical importance here. Testing, certifying qualities or regulation through HACCP procedures, securing pre-certification for exports through in-country inspection by importing countries are areas where the public sector is important. Empowering small farmer groups to adopt production practices that help meet standards are important as well. Some examples of overcoming SPS barriers – the case of shrimp exports from Bangladesh, snow peas from Guatemala (Unnevehr, 1999 citing Sullivan et al 1999), and fish exports from India – demonstrate that public sector and international agencies can play a dynamic role in assisting exporters meet food safety standards (Boxes 8, 9 & 10). This has also been true generally of high value exports as the case of China’s cut-flowers demonstrates (Box 10).

**Box 8: Bangladesh: Fish Exports**

Small-scale fish farmers form the backbone of Bangladesh’s aquaculture industry which is the second largest source of foreign exchange earnings (US$ 360 billion in 2000) after garments. Aquaculture farms are linked to these small-scale shrimp collectors through a network of middlemen for supply of live wild juvenile prawns etc. that are then bred in water bodies. They are in turn linked to export processors or other commercial processors.

One of the instances of international cooperation is the “Export Promotion of Value-Added Fishery Products and their Sustainable Development” a project co-financed by the Common Fund for Commodities (CFC), International Fund for Agricultural Development (IFAD), INFOFISH, the FAO and participating Bangladeshi firms. Through a multi-pronged capacity-building program aimed at enhancing value-added production for lucrative markets, the project trained about 329 people in value-added production and quality standards (i.e. HACCP procedures). Importantly, following the EU ban in 1997 on Bangladeshi seafood due to sanitary reasons, the project played a key role in upgrading 5 of the 7 participating companies to EU standards. This was in addition to promotion of private sector investment in processing facilities and transfer of know-how. Most importantly, the project succeeded in integrating small-scale exporters into the international network of seafood processor exporters. In India, a similar story happened where following a ban on fish exports in 1997, industry upgraded its facilities so that by 1991 there were as many as 121 world-class plants in operation.

This is a promising example of how private industry in conjunction with international cooperative effort, can go a long way in strengthening capabilities in sectors where smallholder participation is significant most significantly to tackle the challenges of globalization.


**Box 9: Guatemala: Snow Pea Exports**

During 1984-94, over 3000 Guatemalan shipments of snow peas worth over US$18 million were detained and/or rejected at US ports for chemical residue violations. This was because producers used chemical means to control disease and insects. In 1995, leaf miner crisis led to a USDA Plant Protection Quarantine for all Guatemalan snow pea shipments.

At this stage, the Government of Guatemala with the help of USAID sponsored research eventually established that the leaf miner was not exotic to the US and therefore did not pose a threat to US producers. Control strategies to reduce chemical overuse too were recommended. Consequently, integrated pest management (IPM) techniques lowered rejection rates of shipments, while in 1997, the PPQ was withdrawn re-establishing an annual US$ 35 million market.

The importance of this story lies in the fact that without proactive government support (and international financial assistance) small farmers with limited means, organization and access to scientific skills may have not had the ability to fashion a similarly happy ending.

Experience so far thus suggests that while private sector role and high degree of vertical integration has been instrumental in successful export production, while Government assistance in providing necessary infrastructure, market information, research and testing and certification was important (Unnehver and Hirschhorn, 2000).

To sum up the evidence on other global drivers and meta-trends, it is evident they pose a big challenge to small farmers, ironically, more in areas that offer them greatest opportunity – namely high-value agriculture. However, there are also clear indications that these challenges can be met and in some cases have been met through a combination of (1) vertical coordination with processors and agro-industry and (2) a pro-active public sector or government (whether in research, or establishing certifying and testing procedures).

6.  What do we learn from the Literature Review?

Following the extensive overview of literature pertaining to various factors that impinge on smallholders, it is now time to see what we can learn from this – in terms of which methods offer greatest insight, what areas would need research to further our understanding, and most importantly what do the findings of these studies imply for policies.

6.1 Observations on Methods and Approaches

Even at the outset, it was emphasized that given the various and complex dimensions of smallholders’ new context, any attempt to answer the question would have to factor in as many aspects of the problem as possible – this would include not only price changes induced by trade liberalization but also changes being engineered by other global drivers and meta-trends. Understandably, so far, no study reviewed has been so comprehensive as to cover the whole canvas of issues. It is evident that studies on different aspects of globalization and the smallholder have various foci, use diverse approaches with different points of departure. Their results are as mixed and varied as the methods they employ. Even those studies that focus on a small subset of issues offer no consensus.
An important feature that emerges is that studies focussing on trade liberalization alone (operating through price changes) and those that address broader issues of globalization (such as changing structure of food industry and new relationships in the interface of farm and firm, SPS issues, etc.) have run somewhat parallel to each other where a greater integration the two would be valuable. Methodological approaches may have something to do with this apparent dichotomy. Modeling, used so commonly in trade liberalization studies, has limited scope in capturing structural changes that typify broader issues of globalization. Most importantly however, given the context of this paper, the modeling approach tends to make some “killer assumptions”, tending to assume away critical factors such as institutional constraints, the global drivers and the meta-trends. As the review of studies show, this is a grave problem, since increasingly global drivers other than trade liberalization and meta-trends (like SPS, IPRs, FDI in food industry) have become the factors to reckon with. Qualitative approaches, on the other hand, although useful to focus on particular aspects, fail to capture the net impact of the different changes in a rigorous way. In particular, those dealing with issues such as quality standards, technological change, etc. are usually devoid of the context of price changes induced by trade liberalization. It seems that the databased approach (or survey based approach), in conjunction with qualitative studies, offer best scope to assess the predicate of the smallholder.

Apart from greater integration of the two streams of literature, there are several areas, which are significantly under-researched, that deserve attention. These include the implications of IPR (particularly changing structure of the seed industry), compliance costs of SPS, implications of different kinds of technological advances, concentration of food-related industry and their implications for smallholders. In particular, it would be useful to have rigorous databased evidence of impact on smallholders in this area.

Finally, another thing that emerges from the review is that almost all the studies that have been reviewed, address smallholders often only peripherally in discussions of larger issues such as technological change, trade liberalization or food safety and quality standards. It would be useful instead to allow smallholders to be the subject of their own story and view changes relating to globalization from their point of view. Only then is it possible to identify which factors are likely to have greatest impact, and how these different forces collectively impact on smallholders. This is really the key to understanding how globalization affects smallholders and what policy options are available to deal with the issue.

6.2. Who are the Winners? Who are the Losers?

Returning now to the all-important question: Can smallholders ride the wave of globalization or will they be swept away? What has been the experience so far? Who are the losers and who are the winners?

It is clear that for smallholders in developing countries, high-value exports and increasingly for urban domestic markets offer a great opportunity. Smallholders who are able to successfully do so would gain substantially from globalization. Indeed, all over, there have been instances of small farmers benefiting from such exports (cut flowers from China, fish from Bangladesh, horticulture from Kenya and Zimbabwe, etc.). It is instructive that in all these cases, the winners have been those smallholders
(1) who are vertically integrated with agri-businesses (exporters or otherwise) or have devised institutional innovations (such as cooperatives or farmer companies) for collective strength;
(2) having access to better physical infrastructure and credit; and
(3) have benefited from role played by public sector, private industry or international cooperation in capacity building

On the other hand, there are also those who have failed to capitalize on the opportunities opened up by globalization or have been adversely affected. Despite the diversity in the methods, approach and orientation of different studies, there seems to be clear indication that these smallholders in developing countries are those who
(1) are poorly endowed in terms of natural resources, assets, and infrastructure
(2) lack access to markets for output, input, land, as also credit and insurance, and
(3) have limited alternatives for employment (off-farm) in rural and urban areas – in agro-industries or otherwise.
6.3. Where have smallholders benefited more – Africa, Asia or Latin America?

While each regions has its winners and losers, it also emerges that there are some broad differences between regions. It appears for instance, that smallholders in Africa and Asia, are more vulnerable or constrained than their counterparts in Latin America.

In Africa, the major roadblocks are structural and institutional constraints. These seem to have driven the farmers to subsistence in several parts – as Barrett’s immiserized growth in Madagascar suggests, and therefore unable to exploit opportunities for trade where it exists – as Jayne points out for Zimbabwe. Apart from the sheer magnitude of transport and marketing costs, other constraints like credit, access to insurance, inputs, skill base, etc. are also problems to varying degree. Indeed, much of the literature that discusses these constraints pertain to Africa. Also interesting is the finding that smallholder income in Africa is highly diverse suggests that there may be push factors at work. Smallholders turn to rural non-farm employment as risk-cop strategy or ex-post management of shocks (Barrett, Reardon & Webb, 2001). Regarding other factors of globalization, there is not much evidence that the pace of agro-industrialization has been significant to merit special attention. However, food safety and quality, particularly in European markets has been something of an issue since it holds great potential for African horticultural exports. Evidence on smallholder participation in high-value agriculture indicates that smallholder participation has been heartening (Kenya and Zimbabwe) in some cases. Much of this has been due to vertical integration of smallholders with agri-exporters.

Asia, particularly South-east Asia, is much better endowed with infrastructure and some successful examples of smallholder-friendly institutions – like microfinance and other informal and formal lending mechanisms in Bangladesh, Thailand and Indonesia, dairy cooperatives in India etc. – as also higher levels of human development. Partly because of these factors, several countries in Asia, mainly in South-east Asia (Thailand, Viet Nam, etc.) but also in South Asia (Bangladesh, India) have been able to exploit opportunities opened up by export liberalization and the growing demand in high-value agriculture such as fish and poultry and have been successful in adapting to the requirements posed by a new global trading environment. Here, the concern is whether agro-industrialization has been sufficiently inclusive vis-à-vis small farmers. There are indications that in Bangladesh’s fish industry, small farmers are an important part, as is the case in China’s cut flower exports. It is essential to study further the systems that have worked well so that these best practices can be adopted on a wider scale.

A distinguishing feature of smallholders in several Asian countries seems to be the greater dependence on on-farm employment (agricultural wages) and seasonal migration to urban centres (China, India, Thailand, etc.) as against rural non-farm employment, than in Africa or Latin America. In fact in Latin America and Africa, farm wage labour is something of a “refuge job”. It could well be that in Asia, given the link between agricultural prices and wages, higher prices of commodities like rice post-export liberalization have buoyed up wages, making it attractive for smallholders to also supply labour on the farm. There is some evidence that migration to urban centres occur primarily from poor but not poorly endowed agricultural regions (as in migrants from Bihar into Delhi) which is reflective push factors. In several other cases, it is the attractive wages and perceived employment opportunities that pull in migrants (China). In the former, it would be essential to focus on agricultural development (including infrastructure, credit etc.) itself in such problem-areas. It would nevertheless be useful to focus on why rural non-farm employment in Asia is not as important and if special attention needs to be devoted to performance of this sector.

The other important constraints in Asia seem to be credit and price risk management institutions. However, this area has been attracting a lot of attention from policy makers and several instruments are being devised and operationalized to tackle this. Much success has been reported by different schemes (the kisan credit card in India, microfinance in Bangladesh, etc.) in alleviating credit constraints. This may be the path to greater success in smallholder agriculture.

Latin America appears to be somewhat different from Africa and Asia and in some ways has had greater success. Agro-industrialization proceeded at a much faster pace and much earlier here than elsewhere, notably in countries such as Brazil, Argentina and Chile. This seems to have generated substantial positive employment effects. Also, arrangements such as contract farming, cooperatives, farmer companies, despite hiccups, seem to have worked well for small farmers. In Latin America too as in Africa, a lion’s share of rural household income comes from the rural non-farm sector. It is however noteworthy that it is the pull factor that seems to be at work here rather than the push factor. Self-employment or jobs in the services sector (including input provision, transport and related services) seem to be important in many countries in Latin America. The poorer farm households are more similar to their counterparts in Africa and may be responding to push factors when they diversify their sources of income. As far as institutional and structural constraints are concerned, Latin America has been ahead of Asia and Africa in
experimenting with schemes designed to provide insurance against risks (like warehouse receipts systems) have well-functioning commodity exchanges etc. In a relative sense, smallholders in Latin America seem to have had most success in riding the globalization wave.

6.4. What are the Policy Implications? Some Tentative Conclusions

The broad findings that come out of review of literature has some important policy implications. In the context of smallholders in a globalizing world, policies would have to address two related objectives (1) to enable smallholders take advantage of opportunities where there are constraints preventing them from doing so and (2) to deal with and minimize the adverse impact, where smallholders are hurt in the globalization process. Towards achieving these two objectives, it would be useful to think of two broad groups of policy instruments: (1) Enabling factors, that help farmers ride the globalization wave and (2) Coping factors, that protect them from being swept away.

6.4.1. Enabling Factors

If smallholders are to ride the wave of globalization, it is evident that the many constraints they face are removed. Of these, the six areas that can be deemed critical, and therefore should be targeted by policy interventions are

1. Vertical Coordination
2. Reducing Transactions Costs
3. Building Human Capital – Literacy & Training
4. Removing Credit Constraint
5. A proactive Public Sector and
6. International Capacity-Building

• Greater vertical coordination with agro-industry facilitates participation of small farmers in growing processed food trade, particularly in meeting food safety and quality standards. These can be achieved through institutional innovations such as cooperatives, contract farming and clustering. The state has an important role to play in areas of contract enforceability, etc. Also, the initial establishment of such relationships might require some coordination from the state or NGOs, in particular, in institutions such as cooperatives, and to ensure fair rules of the game.

• There is overwhelming evidence that transactions costs often prove so high that smallholders are unable to take advantage of opportunities to trade and instead retreat into subsistence. This would imply improving access to physical infrastructure, marketing institutions, information etc. and also removal of legislative constraints, etc.

• Among the more important findings is that often credit is the single most important constraint for small farmers. It has been found that sometimes credit constraints keep the farmer in the labour market. When this is addressed, returns to labour for small farmers increase. This has been recognized early enough and several innovative schemes, such as credit cards (India), livestock repos (Argentina), etc. have proved to be happy examples of success. However, this would have to be replicated on a far greater scale and in ways that are sustainable and situation-specific.
Figure 4: Policy Implications: A Two-pronged Approach

- Providing basic education and literacy would equip small farmers better with the skills required to take advantage of opportunities. In particular, adoption of technology and participation in new institutional innovations would most likely be higher for literate farmers.

- Successful smallholder participation is also predicated on a pro-active government and public sector, that contributes in areas such as certification, inspection, testing, technology adoption in processing but also plays a role in fostering agro-industry and

- With globalization is implied a greater degree of interdependence between countries. It however, entails significant adjustment costs for developing countries, which are also financially less capable. Under the circumstances, it is desirable that there is a larger scale of international capacity building measures to enable developing countries to cope with the many challenges that globalization poses. This can occur at different levels:

  **Institution and infrastructure building:** International role in enabling developing countries exploit opportunities opened up by trade have been important in the past. As the case of China’s cut flower exports, Bangladesh’s marine exports, etc. demonstrate international cooperation has contributed a great deal to capacity of these countries. A greater scale of such activities in partnership with national and local governments is essential particularly in the resource-poor backward regions, where private initiative is least likely to penetrate.
Political Empowerment: It would be essential to bring in a greater degree of representation of smallholder interests in the political decision-making processes.

International Negotiations: Finally at another level, it is essential to build capacity in developing countries to participate more in the process of globalization. This would involve more active involvement in the multilateral trade negotiations, and in decision-making processes of standard setting bodies (like the Codex, etc.). Only then can the concerns of smallholders be integrated into larger issues of globalization in a meaningful way.

6.4.2 Coping Factors

While enabling factors seek to act as facilitators for smallholders to take advantage of opportunities that globalization offers, there is also a need to have protective instruments that minimize the adverse impacts that inevitably accompany the globalization process. For small farmers, these boil down to

1. Availability of safety nets and risk-coping instruments
2. Exit options, most importantly in the Rural Non-farm Sector
3. Protection from monopolistic competition
4. Technology that serves their needs

- Price volatility and more importantly persistence of low prices have surfaced as critical threats for small farmers. Given their low capital and resource base, it is important that smallholders have access to price risk management instruments and safety nets. Unlike the developed countries that can offer safety nets, developing countries’ thin treasuries underscore the need to have other alternatives. There have been several successes in evolving schemes that help small farmers cope with price risks ranging from commodity and futures exchanges to warehouse receipts system, etc. Several financial instruments act both as price-risk management instruments and as means of accessing credit. As far as safety nets are concerned, ensuring availability of food and the use of food coupons or stamps could be very important. Also, given that employment is the best safety net, complementary policies such as rural works or food for work programs would be necessary. All this would have to be complemented with border protection policies based on automatic triggers such as SSGs, price floors or price band systems etc. that are compatible with the WTO Agreement on Agriculture, since price crashes in international markets can wipe out the production base of smallholders fairly rapidly.

- It is apparent that rural non-farm employment is quite an important source of income for small farmers and where the push factors are severe, can provide a credible alternative. Greater attention to this sector in policy discussions is important. The rural non-farm sector has often been relegated to “no-man’s land” and this would have to be redressed. This can be achieved through (a) overhauling financing of RNF activities (b) provision of infrastructure in rural areas, streamlining land legislations or other restrictive laws could so that agro-industries and other non-farm activities are promoted in rural areas (c) raising skills of small farmers so that they do not act as entry-barriers. Of these educational attainment (Barrett), physical access to markets (Lanjouw et al for Tanzania, Smith et al in Uganda) etc. seem to be particularly important.

- Growing scale of operations and recent trends in mergers both globally and nationally draw attention to problems with monopolistic competition all along the agri-food chain. Under the circumstances, domestic policy and legislations (like anti-trust, etc.) may have to be established to govern monopolistic structures (this has been effectively used in the US to control retail mergers), but not so severe as to pose constraints to growth of the agri-business sector in the developing countries.

- Technological research geared to address specific small farmer is unlikely to be undertaken by private sector, and even in the public sector, political disempowerment could relegate these important issues to the periphery. There is a need for more focused research particularly with inexpensive, small-scale technologies, and for those in resource poor regions (typically unirrigated, rain-fed regions). It is also important to ensure the transfer of these technologies to small farmers, who may have problems gaining access to these technologies.

These coping policies would collectively ensure that the adverse impact of globalization is minimized.
7. Summary and Concluding Remarks

This study had a four-fold objective: to maps the factors that would impinge on the smallholder in a globalizing world agriculture, to review and summarize the different approaches and methodology and to identify important areas where there has not been much research and to explore the policy implications that come out of the literature review.

The study finds that studies that focus on trade liberalization alone (operating through price changes) and those that address broader issues of globalization (such as changing structure of food industry and new relationships in the interface of farm and firm, SPS issues, etc.) have run somewhat parallel to each other where a greater integration the two would be valuable. This apparent dichotomy can be attributed partly to the difference in methodological approaches, with modeling being the preferred approach for trade liberalization studies and qualitative and databased approaches for studies on other global drivers and meta-trends. It seems that the databased approach (or survey based approach), in conjunction with qualitative studies, offer best scope to assess the predicate of the smallholder. Importantly, it emerges from the review that barring a few areas such as short-term impact of price change, institutional and structural constraints, contractual relationships between farm and firm, the smallholder question has not attracted the attention it deserves.

An objective of this study was to find out from existing literature whether smallholders have benefited from the globalization process or have been adversely affected. Broadly it emerges that while some smallholders have succeeded in riding the wave of globalization, others have not yet been unable to exploit opportunities opened up by globalization to the extent possible. Noteworthy is the difference across regions. Smallholders in Latin America appear to have had greater relative success in riding the globalization wave than have their counterparts in Africa and Asia. While acknowledging the significant differences even within regions, it is evident that whether smallholders have benefited or have been hurt is determined by a fairly narrow range of issues. The search is then for policies that can successfully address these issues.

Based on this, policy interventions vis-à-vis smallholders should essentially have a twin focus (1) First, on removing the shackles that are currently constraining smallholders from exploiting opportunities that globalization presents and (2) Second, on ensuring minimum adverse impact. While the former can be accomplished through enabling policies, the latter would have to be tackled through coping policies.

The areas identified as critical enabling factors are greater vertical coordination, removing credit constraints, reducing transactions costs, building social capital, greater role for public sector in providing infrastructure and facilitating institutions and also greater initiatives for international capacity building. On the other hand, coping strategies would include provision of credible safety nets and risk coping instruments, promoting exit options particularly through promotion of opportunities in the rural non-farm sector, guarding against harmful monopolistic competition, and focused research on technologies for small farmers.

Needless to say, the relative importance of each of these would be different in different regions. It is thus important to identify which battery of policies is appropriate depending on the unique circumstances of each region. It is equally important to draw lessons from the several success stories to be able replicate these successes on a larger scale in a meaningful way. Only then can small farmers make big gains from globalization.
Appendix 1: Cooperatives, Clustering and Contract Farming: What do Studies Conclude?

Three institutional mechanisms – cooperatives, clustering and contract farming – have been discussed extensively in the context of small farmers. The question is: do such arrangements benefit smallholders? If not, how can we ensure that they do? Following is a brief review of work that addresses this question.

Cooperatives

Cooperatives have been recognized as useful means for small farmers to overcome constraints of high transactions costs of operating on a small-scale. Successes with cooperatives have been particularly prominent with small-scale dairy. Small-scale dairy producers, for instance, face hidden costs that limit their ability to participate in markets – these transactions costs may be pecuniary and non-pecuniary (Staal et al. 1997). Cooperative sales by resource poor dairy farmers in peri-urban settings in East African highlands, in this case, have been found an effective route for overcoming these transaction costs. India’s milk cooperatives under Operation Flood too have been noteworthy successes.

However, it has been pointed out that institutional innovations by themselves may be inadequate to foster smallholder participation. There is a critical role played by asset accumulation of the household, availability of infrastructure, knowledge and information (Holloway et al, 2000), which calls for proactive government role to facilitate the operations of institutions such as cooperatives. Holloway et al (2000) also point out that cooperatives in Africa have often been beset with problems primarily due to the inability of the members to hold the management accountable to its members leading to inappropriate political activities or financial irregularities (de Janvry et al. 1993, Akwabi-Ameyaw, 1997). At other times it has often been due to investment at scales beyond the organizations ability to manage or if their area of operations too broad. Staal et al (1997) for instance attribute the success of cooperatives in Uganda and Kenya to their focussed orientation to milk production and marketing alone.

Clustering

The second form that has drawn attention is clustering which typically occurs spontaneously and is not always organized. Clusters are not always homogeneous and their impact on small farmers can vary substantially. While clusters in palm sugar and soybean sector in Indonesia comprise small firms (Sandee and Burger, 2000) as in palm in Malaysia (Ahmad and Tengku), dairy clusters in South American countries include farms of varying scale. Dirven (2000) points out that clustering may not always protect small producers, drawing on examples from dairy clusters in Argentina and Chile. It would be interesting to determine the cases under which smallholders stand to benefit and where they may not.

Contract Farming

The other important institutional innovation is contract farming. Linking up of small farmers with food industry through vertical coordination is being increasingly advocated (Delgado, 1998). Contract farming is seen by some as a way in which private firms can subsume the role of the state with the latter’s withdrawal and could perform these functions more efficiently (Dirven, 1996; Schejtmann, 1996). However, there is also a fear that even if small farmers did manage to enter into contractual relationships with the large agri-industry their bargaining power could be severely constrained and they might end up facing monopsonistic markets. A related question has been whether contract farming arrangements reinforce existing income inequalities or has the opposite effect and makes income distribution more equal. Reviews of contract farming literature are available in Grosh (1994), Minot (1986), Runsten and Key (1996, 1999) and Warning and Soohoo (2001).
Runsten and Key (1996, 1999) while elaborating on theoretical aspects of contract farming also identify circumstances under which it may benefit the smallholder. In a case study of the frozen vegetables industry in Mexico, they analyze the circumstances under which firms contract with large or small growers. Initially, the multinationals opted to contract with larger farmers since they felt that *smallholders depended on the firm too much* for far too many services (loans for operating capital, inputs, etc.) while increasing communications costs (due to lack of telephones), monitoring etc. When one of the MNCs did contract with smallholders it stemmed in part from a threat of the few large farmers *colluding and bargaining* for higher prices for the output. Invariably, when the number of large farmers grew, they displaced small growers in the company’s relationship map. Warning and Soohoo (2000) point out, for instance, that while on the one hand agro-industrial firms would prefer to contract with large growers due to the substantially *lower transactions* costs of dealing with them, the opposite could also occur under some circumstances. *Weak institutional development* (such as poor market development, lack of access to credit and insurance) could render contracting with smallholders mutually beneficial. While the firm takes advantage of the limited alternatives of smallholders, the smallholders would be able to access markets, credit and insurance. The experience of MNCs in Mexico suggests that where small growers were contracted for produce, it was more on account of *absence of alternatives*. That the nature of the contract party may not matter so much is brought out by the example of tea and sugar in Malawi where the state engages farmers in contracts. A bias against the smallholders that is apparent it seems is rather the result of *nature of crops*, which entails specialized inputs, complex production processes and substantial capital (Nankumba and Kalua, 1989).

There have been several other examples of smallholders being integrated into contracting relationships in a mutually beneficial way. Horticulture in the central Kenyan highlands is an instance where a capital-and skill intensive activity has shifted to smaller-scale contract farms with backing by the government. So too in Guatemala and Honduras, where foreign distributors have contracted with large numbers of small farmers particularly in areas where population densities in vegetable growing areas was high. While typically, such small-scale participation in the livestock sector is more difficult. In this context an example of successful contract farming is the Soro-Soro Ibaba cooperative in Southern Luzon, Philippines. Here are large number of non-agricultural investors are linked with regionally defined groups of small-scale farmers. The latter is paid a fixed fee per animal and is responsible for providing infrastructure and management services during the fattening phase, while the hogs, veterinary support and marketing services are provided by the cooperative.

An interesting indigenous institutional innovation has been observed in Peru’s cotton industry, where the small farmers inability to contract directly with large firms is redressed by the formation of farmers companies (Escobal, 1999). Smallholder participation has also been achieved through use of differentiated contracts (which enabled farmers to choose according to their needs and therefore presumably welfare enhancing)\(^{21}\), through extra-contractual transactions (such as employment of the smallholder or his family in the firm), sharing the transaction costs with the smallholders and often success in bringing it down. Of the few quantitative studies in this area, Warning and Key (2000) find from a case study of peanut contract farming in Senegal that the size of the landholding did not determine participation as much as reputation did, emphasizing that smallholders are not inherently disadvantaged with the emergence of new contractual relationships with industry. Among the important factors in its success is the absence of substantial risk in its cultivation i.e. not significantly different from that in traditional crops and the use of local intermediaries to monitor and enforce contracts. Another instance is where the costs of contract enforcement were large enough to outweigh the generally higher costs of transacting with small farmers encouraged a shift to small growers. The high transactions costs and institutional constraints faced by small growers reduced the chances of their reneging on the contracts. It meant that small growers would be more dependent on the firms which was good for the firms, the smallholders themselves would have access to institutions, markets and credit that they would not have had otherwise.

\(^{21}\) It is noteworthy that companies that were unable to match Campbells’ offers on differentiated contracts put pressure on Campbell to align its prices with that offered by others.
Some fear that it is precisely this dependence of the smallholders on large profit-driven agri-business firms that would drive the latter to exploit the former. Vorley and Berdegue (2001) suggest that civil society groups must monitor performance of food processors, retailers and food service companies with regard to sourcing from smallholders with fair terms of trade. A responsive and accountable state should be a partner with an economically and politically organized rural civil society to overcome exclusion from policy making and from markets, improve bargaining power and access technical assistance to meet standards and consistency of supply.22

It is clear from this review that whether the smallholder is involved and benefits from contractual ties with the agro-industry is specific to the situation and there is no inherent bias in either direction. In particular, three issues could be seen as important here (Delgado, Minot and Wada, 2001) (1) whether wholesale and retail outlets have alternatives to smallholders for sourcing their supply (say, corporate farming plantation style) (2) whether governments facilitate smallholder production and (3) the degree of participation by smallholders in managing smallholder schemes.

A few points are worth emphasizing at this stage. First, is importance of a referee to ensure that smallholders do indeed benefit – a role that can be played by independent regulatory bodies or arms of the state or civil society. Second, as most studies indicate, governments could, indeed ought to play an important role to foster smallholder participation in the food industry by providing the necessary asset base, infrastructure etc. to reduce high transactions cost that constrain them (Holloway et al, 2000, Delgado 1998, Escobal et al, 2000) and availability of a credible enforcement mechanism (perhaps along the lines Vorley and Berdegue, 2001 suggest).

The other set of issues that must be addressed is the effect of emergence of agro-industries on aggregate employment, rather than a narrow focus on its sourcing of produce. As mentioned above neither an increasing capital intensity, nor emergence of large-scale agri-businesses have any inherent anti-smallholder bias if they generate positive net gains in employment. Barron and Rello (2000) describe the case of the tomato agroindustry in Mexico as an instance where the development of the agro-industry had an employment-generating effect on poor households. Thus it is possible that even as agro-industry crowds out smallholders its development could have compensating increases in employment. The net-effect of these two contrary effects has not been documented in great detail. The case study of Peru’s asparagus and cotton agro-industry reveals that the contracting of farmers in the former (that was composed mainly of large farmers) and the formation of farmers’ companies (comprising small cotton growers) has ambiguous impact on employment (although they tended to be negative). The ambiguity arose because on the one hand, the emergence of asparagus led to farm-firm contracts that excluded small farmers and also represented a shift to capital-intensive industry impacting employment adversely. On the other hand, large farmers moving out of cotton to asparagus meant that smallholder participation in the cotton-industry was much higher now, consolidated through farmer companies. This area, it appears, needs more attention than has been accorded so far.

It is evident that whatever the institutional arrangement, it can work both ways, benefit smallholders in some cases and adversely affect them in others. It is essential to review carefully the experiences – both successes and failures – to identify the conditions under which smallholders can be effectively integrated into the agri-food chain in a beneficial way. Also important is that, all else being equal, a particular arrangement may work well in some regions but may fail in others, because of social or cultural factors. This is also something that needs greater attention when devising institutional arrangements.

22 An interesting related question is the role of NGOs in fostering small-holder participation in certain sectors the are providing key services as part of a micro-enterprise development strategy. As Reardon and Barrett (2000) point out, whether this truly assists small players or whether they crowd out indigenous private service providers remains an open question.

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