

CHAPTER 8

THE RAPID RISE OF SUPERMARKETS AND THE USE OF PRIVATE STANDARDS IN THEIR FOOD PRODUCT PROCUREMENT SYSTEMS IN DEVELOPING COUNTRIES

THOMAS REARDON¹

*Michigan State University, Department of Agricultural Economics
East Lansing, MI 48824, USA
E-mail: reardon@msu.edu*

Abstract. Supermarkets play a leading role in food supply chains in developing countries, and grades and standards are becoming key instruments for product differentiation and agri-food chain coordination. This article traces main patterns and trends in the emergence and expansion of supermarkets in developing countries, and illustrates their leading role in domestic food retail. This gives rise to a restructuring of the procurement systems of supermarkets, based on central sourcing, growing use of specialized/dedicated wholesalers and a shift towards preferred suppliers. Emerging trend also indicate a rapid rise in the implementation of private safety and quality standards in the supermarket sector for reducing the coordination costs in procurement systems. A taxonomy and illustrations of the interfaces between procurement systems and private standards is presented and implications for smallholder participation and agricultural development are discussed.

Keywords: supermarkets; procurement regimes; grades and standards; smallholders

INTRODUCTION

Standards are imposed by the various actors in the agro-food system, from ‘upstream’ actors such as farmers and input suppliers, to ‘downstream’ actors such as wholesalers, processors, retailers and food service firms. These standards can relate to: (1) quality and safety of the product itself; (2) actions to take in the production process to produce quality and safety attributes in the final product; (3) environmental and labour attributes of the production process; (4) communication such as reporting of implementation of standards. They are specified to suppliers by buyers and/or supplier organizations; if they are specified by buyers, they usually include a specification of transaction attributes such as delivery volume, timing, packaging, as well as a specification of the price and payment period.

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Meeting the set of product and process standards and transaction attribute requirements in turn implies a specific set of practices, such as on-farm and post-harvest technologies, to be used by the producer. To gain access to a market that requires meeting a specific set of standards and other transaction attribute requirements, implies that the producer incur costs and make investments. Those expenditures are of course offset by the higher returns (relative to alternatives) of entering that market (or the supplier would not shift from his/her current market).

A key development issue thus arises. If it is necessary for a producer to shift from his/her current market (such as a stagnant rural market) to a new market (such as a dynamic urban market) with new standards in order to move out of poverty, then the producer needs to be able to meet the standards of the new market. The capacity to do so – including the broad vector of capital assets such as human, social, organization, physical and financial capital – then becomes essential to exit poverty or to manage income risk or both.

It is thus crucial to know several things: (1) is it necessary for producers to move beyond their traditional markets to access new markets in order to exit poverty and manage income risk? (2) what are the candidate ‘new markets’? (3) what are the standards of the ‘new markets’? (4) Who sets the standards for the new markets? (5) How are the standards implemented/enforced? (6) Can small producers meet the standards of these new (for them) markets?

This chapter will not address the first two questions, because there is a broad consensus among governments and donors in developing countries that agro-food producers need to seek export and urban markets to exit poverty and manage income risk, simply because rural incomes are not growing, or are growing much more slowly than those of consumers in the other two markets. Moreover, there is a broad consensus, reflected in a widespread adoption of agricultural diversification programmes by governments and donors, that small/medium producers need to move beyond markets for staple foods, such as bulk grains, into value-added products and non-staples such as fruits and vegetables, dairy products, meat and fish.

The chapter will, however, focus on questions 3-6 – what are the standards of the ‘new markets’ facing small/medium producers, who sets them and how are they implemented, and can producers meet them? I think these are among the most important development issues today.

But the focus of my approach to these questions will contrast sharply with the usual approach to these questions today. A quick scan of the literature on these issues in developing countries in the past five years focuses nearly exclusively on export markets and on public standards (standards set by governments with jurisdiction over the market in question). The literature is thus filled with debate about WTO/SPS, about non-tariff trade barriers in the form of bilateral standards, and about CODEX².

While I do not argue that this ‘trade and public standards’ focus is not an important debate, and I note that it is not useful for me to add yet another review paper on that debate, I will instead argue that that debate focuses on a relatively minor set of issues with respect to the questions above, for developing-country small/medium farmers. At least as, or even more important are private (not public) standards, set and implemented by large-scale agro-food industry firms such as

supermarkets and large-scale processors (not governments or multilateral organizations) 'downstream' in domestic food markets (not export markets). The support for this point, hence the justification for my focus, is necessary.

First, the export market is on average (of course differing greatly over products) a small part of the overall agro-food market facing producers – especially small/medium producers – in developing regions. Reardon and Timmer (in press) estimate that in 2002, the share of exports in output of small/medium farmers in developing regions, is about 3% of their output, and only 5% of their marketings (of grain, fruits, vegetables, meat, fish, cotton, coffee/cocoa, sugar and oil palm). Thus trade is a very minor topic with respect to the subjects of markets and the poor in developing regions. Domestic urban markets – and who sets the terms for farmers' access to them – are a far more important subject with respect to rural development and poverty alleviation.

Second, public standards for domestic food markets are scant and scantily implemented in many developing countries. Most developing countries face public standards imposed by importing governments for export markets (such as USDA and FDA standards to export from a developing country to the US market), and governments in those countries make those local public standards imposed on exporters; the governments also usually have a plant and animal health inspection service at the border or at the ports and airports to monitor exports and imports. Some, especially the larger or more advanced developing countries, also have regulations for food safety for domestic markets. But there is plenty of emerging evidence that while these rules are 'on the books', the governments tend to have little or very little capacity to monitor domestic markets and enforce these rules. There are a few exceptions of course where the apparatus is relatively extensive, such as in China, but even there the public standards can only be enforced at key points of large-scale production such as milk-product factories.

Third, does this mean that there are no safety or quality standards applied in domestic food markets and thus the issue of 'standards in developing countries' is the most minor of development topics? Far from it. I show in this chapter that emerging very rapidly, and in many urban areas of developing countries already dominant, are 'modern' food industry firms that have the incentive – and through their procurement systems, the capacity – to implement private standards. Chief among these are supermarket chains – and the large-scale processors that supply products to meet supermarket requirements. These standards have in fact become important strategic market tools in a situation where the food market is passing from a market of commodities to a market of differentiated products heavily contested by powerful firms in consolidated food sectors.

Where the subject of the effects of private standards of modern food industry on developing-country producers has been treated in the literature, it has been nearly exclusively focused on the food industry in developed countries imposing 'export standards' on third-world exporters, such as recent work on EUREPGAP effects on produce exporters from Africa (Henson and Loader 2001), or UK supermarkets and Kenyan produce exporters (Dolan and Humphrey 2000). There has been very little research on or discussion of the effects of food-industry firms in developing countries imposing private standards on the local market, with the exception of some

recent work on milk-processing private standards in developing regions³, and the recent literature on supermarkets that is the focus of this chapter.

The gist of this paper is that the supermarket chains (and processors that meet their specifications) are the main actors in imposing private standards on producers. The thousands of traditional food industry actors downstream in the food system – including the mom and pop stores, the wetmarkets, the small-scale processors and the traditional brokers – do not have the capacity to implement standards, or to do so only minimally. But I show that supermarkets are taking over the market from the traditional players, and imposing standards that both serve to ‘grow’ the market and thus represent an opportunity for producers, but also imply stiff requirements for new practices by producers and thus the costs and investments noted above – and thus the possibility of exclusion of the small and poor producers from urban markets.

The chapter proceeds as follows. Section 2 lays out definitions. Section 3 traces trends in the rise of supermarkets in developing countries. Section 3 focuses on the evolution of the procurement systems of supermarkets to show that they are developing the capacity, and seeing the incentive, to implement private standards. The section starts with a discussion of organizational change in the procurement systems, and then focuses on institutional change with the development of standards and contracts, placing the latter discussion of private standards in the context of a conceptual framework. Section 4 illustrates with cases of supermarkets applying private standards. Much of the evidence is drawn from Latin America and East/Southeast Asia, the developing regions where food systems are changing most quickly and thus represent the leading edge of change to inform the debate. Section 5 discusses implications for small/medium producers and agricultural development. Section 6 concludes with policy implications.

DEFINITIONS AND ROLES OF STANDARDS

Grades and standards consist of standards (“rules of measurement established by regulation or authority”) and the grades thereof (“a system of classifications based on quantifiable attributes”) (Jones and Hill 1994). I use a relatively broad definition of standards, and highlight several distinctions.

First, standards can pertain to outcome or processes. ‘Outcome’ specifies characteristics the product is expected to have when it reaches a certain point in the agro-food chain. An example is the maximum amount of pesticide residue permitted on apples bought by a processor. Process standards pertain to any process – production of the raw product, processing into intermediate or final goods, or marketing. They specify the characteristics that the processes are expected to have, either to produce a given level of performance of the product (e.g., an organically grown apple, or meat that is safe to consume), or to create or maintain certain conditions for the environment, workers, and so on. An example of a process standard is HACCP (see Unnevehr and Jensen 1999).

Second, standards can pertain to various characteristics of a product: (1) quality (e.g., appearance, cleanliness, taste); (2) safety (e.g., pesticide or artificial-hormone residue, microbial presence); (3) ‘authenticity’ (guarantee of geographical origin or

use of a traditional process); (4) the goodness of the production process (e.g. with respect to labour or environmental conditions). These characteristics are becoming increasingly mixed and linked, especially in private standards and procurement-management systems to implement them, which we discuss below.

Third, the standards formulating and/or implementing entity can be private or public. I do not use the term ‘voluntary standard’ because of the lack of operational usefulness of this term; standards imposed on suppliers by buyers are mandatory (if the supplier wants to sell to that buyer). But I use the term ‘private standard’ to mean a standard that is formulated and implemented by a private firm for market X. For example, this could be a safety standard for apples bought by Carrefour in Mexico for the Mexican apple market. Now, it might be that that standard is a public standard in market Y; for example, CSU Supermarkets in Costa Rica has ‘CSU Standards’ for fruit that are in fact a mix of private quality standards and the US-FDA fruit safety standards. But because the US government has no jurisdiction in the Costa Rican domestic market, CSU is merely using that foreign public standard as a chosen benchmark for its domestic procurement and thus I call it a private standard for the domestic market. Conversely, the Brazilian government is in the process of adopting domestic market private standards for dairy products (formulated by the large dairy-product companies) to be the public standards for dairy products. The government’s standards will then be public standards even though they are based on, or benchmarked from, private standards. Finally, if a private firm merely implements a public standard (where the government has jurisdiction in the market in question), the private implementation does not make the public standard private.

Reardon et al. (1999) note that several major changes have occurred recently in the role and nature of standards, including: (1) a shift in centre of gravity from technical norms to reduce transaction costs in broad homogeneous commodity markets, to strategic instruments of product differentiation, agro-food chain coordination, market creation and share growth; (2) a concomitant shift from public toward private standards; (3) a shift from communicating experience characteristics toward reassuring consumers about credence characteristics such as food safety, worker conditions and location authenticity; (4) a concomitant shift from outcome toward process standards. These shifts are not discussed in general here, but their application in the diffusion of private standards used by supermarkets in developing regions is highlighted below.

THE RISE OF PRIVATE STANDARDS SETTERS: THE RISE OF SUPERMARKETS IN DEVELOPING COUNTRIES

A word about the focus on supermarkets

This section focuses on supermarkets as major actors in the rapidly emerging modern food industry in developing countries. This is not to suggest that supermarkets are the only formulators of private standards in these markets.

On the one hand, there is evidence that large-scale processors such as global dairy firms such as the Swiss firm Nestlé in Brazil (Reardon and Farina 2001),

vegetable processors such as the Swiss firm Gerber, or cereal-processing firms like the Mexican firm Bimbo, set private standards for quality and safety of products in the developing country markets – often in advance of the specification to them of standards regarding processed products by the supermarkets, simply because they are harmonizing these standards with standards of their global operations to increase efficiency. This can lead to harmonization of private standards for processed foods over regional markets, such as in Mercosur (Farina and Reardon 2000). In the 1990s, roughly at the same time and in some cases preceding the rise of supermarkets, there was a rise of large-scale food-manufacturing firms such as those mentioned above. This often followed an initial proliferation of small and medium firms after liberalization of output markets with structural adjustment in the mid to late 1980s – and then a reconcentration of the processing sectors. The general story is told in Reardon and Timmer (in press) and there are interesting case studies such as that of Brazil (which we find to be a typical case and a front runner in trends one sees elsewhere in developing countries) in the dairy sector, told in Jank et al. (Jank et al. 1999b) and in Chile by Dirven (1999), and in Argentina by Gutman (1999), or wheat processing in Brazil, told in Farina and Furquim de Azevedo (1997).

On the other hand, large-scale processors and supermarket chains have a tendency to ‘symbiosis’. Supermarket chains tend to source from large-scale processors in order to reduce transaction costs by using a few large suppliers who have adequate logistics and transportation capacity, to be assured of consistent quality and safety from companies with the capacity to monitor their quality (and enforce standards on their suppliers in turn), and to get the SKU (stock-keeping unit) range they want in ‘one-stop shopping’. Examples include the Xiaobaiyang chain in Beijing shifting from 1000 to 300 processed-food suppliers as it has centralized procurement over the past two years (Hu et al. 2004), or the leading Russian chains focusing on a handful of large foreign and domestic dairy-products manufacturers for the reasons noted above (Dries and Reardon 2005). Moreover, large processors tend to want to supply to supermarket chains because the volumes are larger, their market coverage is broader (and growing rather than shrinking as with the traditional retailers), they can build product diversity and thus manage market risk through them, and supermarkets have the cold chains that the traditional retailers do not have, to handle the shift that suppliers’ seek toward shorter-shelf-life products with higher margins.

The above implies that there is a ‘natural’ confluence of the process of private-standard formulation and implementation between the supermarket’s and the large-scale processor’s movement in this direction. In order then to limit the scope of this paper, we focus on the supermarket side of the equation, and make reference to this symbiosis as we proceed.

The focus here is also on supermarkets⁴ because they have been largely absent from the development debate until very recently, having been traditionally viewed by development economists, policymakers, and practitioners as the retailers of rich countries or at most niche players for rich consumers in the capital cities of developing countries. But I show below that the reality has fundamentally changed, with supermarkets spreading extremely rapidly in developing countries in only the past 5-10 years (of course at different rates and depths across regions and countries)

and in the process becoming the ‘tail that wags the dog’ of the agro-food systems in these regions. This of course does not differ from the recent experience in OECD countries, but is surprising because of the sharp difference with prevailing assumptions of policymakers in these regions, and because the process occurred so much faster than in the OECD countries, and also because, one can argue, developing-country producers are even less well-positioned than OECD farmers to deal with this shock – this change in the markets and standards they face.

In this section we describe this transformation of agro-food systems in Africa, Asia (excluding Japan), Central and Eastern Europe, and Latin America. We focus on the determinants of and patterns in the diffusion of supermarkets, and then we discuss the evolution of procurement systems of those supermarkets – the ‘delivery vehicles’ for private standards.

The spread of supermarkets in developing regions⁵

Determinants of diffusion

The determinants of the diffusion of supermarkets in developing regions can be conceptualized as a system of demand by consumers for supermarket services, and supply of supermarket services – hence investments by supermarket entrepreneurs. Both functions have as arguments incentives and capacity variables.

On the demand side, several forces drive the observed increase in demand for supermarket services (and are similar to those observed in Europe and the United States in the twentieth century). On the ‘demand incentives’ side are: (1) urbanization, with the consequent entry of women into the workforce outside the home, increased the opportunity cost of women’s time and their incentive to seek shopping convenience and processed foods to save cooking time; and (2) supermarkets, often in combination with large-scale food manufacturers, reduced the prices of processed products.

On the ‘demand capacity’ side, several variables were key: (1) real mean per-capita income growth in many countries of the regions during the 1990s, along with the rapid rise of the middle class, increased demand for processed foods (the entry point for supermarkets as they could offer greater variety and lower cost of these products than traditional retailers due to economies of scale in procurement); and (2) rapid growth in the 1990s in ownership of refrigerators meant ability to shift from daily shopping in traditional retail shops to weekly or monthly shopping. Growing access to cars and public transport reinforced this trend.

The supply of supermarket services was driven by several forces, only a subset of which overlap with the drivers of initial supermarket diffusion in Europe and the United States. On the ‘supply incentives’ side: (1) as discussed below, the development of supermarkets was very slow before (roughly) the early-mid 1990s, as only domestic/local capital was involved. In the 1990s and after, foreign direct investment (FDI) was crucial to the take-off of supermarkets. The incentive to undertake FDI by European, US and Japanese chains, and chains in richer countries in the regions under study (such as chains in Hong Kong, South Africa and Costa Rica) was due to saturation and intense competition in home markets and much

higher margins to be made by investing in developing markets. For example, Carrefour earned three times higher margins on average in its Argentine compared to its French operations in the 1990s (Gutman 2002). Moreover, initial competition in the receiving regions was weak, generally with little fight put up by traditional retailers and domestic-capital supermarkets, and there are distinct advantages to early entry, hence occupation of key retail locations.

On the 'supply capacity' side: (1) there was a deluge of FDI that was induced by the policy of full or partial liberalization of retail sector FDI undertaken in many countries in the three regions in the 1990s and after (e.g., partial liberalization of retail trade in China in 1992, with full liberalization of the sector scheduled for 2004, Brazil, Mexico, Argentina in 1994, various African countries via South African investment after apartheid ended in the mid 1990s, Indonesia in 1998, India in 2000). Overall FDI grew 5-10 fold over the 1990s in these regions (UNCTAD 2001); growth of FDI in food retailing mirrored that overall growth; and (2) retail procurement logistics technology and inventory management (such as efficient consumer response, ECR, an inventory management practice that minimizes inventories-on-hand, and use of internet and computers for inventory control and supplier-retailer coordination) were revolutionized in the 1990s. This was led by global chains and is diffusing now in developing regions through knowledge transfer and imitation and innovation by domestic supermarket chains.

These changes were in turn key to the ability to centralize procurement and consolidate distribution in order to "drive costs out of the system", a phrase used widely in the retail industry. Substantial savings were thus possible through efficiency gains, economies of scale, and coordination-cost reductions. China Resources Enterprise (2002), for example, notes that it is saving 40 percent in distribution costs by combining modern logistics with centralized distribution in its two large new distribution centres in southern China. These efficiency gains fuel profits for investment in new stores, and, through intense competition, reduce prices to consumers of essential food products.

Patterns of diffusion

The incentive and capacity determinants of demand for and supply of supermarket services vary markedly over the three regions, within individual countries, and within zones and between rural and urban areas at the country level. Several broad patterns are observed.

First, from earliest to latest adopter of supermarkets, the regions range from Latin America to Asia to Africa, roughly reflecting the ordering of income, urbanization, and infrastructure and policies that favour supermarket growth. The overall image is of waves of diffusion rolling along. The first wave hit major cities in the larger or richer countries of Latin America. The second wave hit in East/Southeast Asia and Central Europe; the third in small or poorer countries of Latin America and Asia including, for example, Central America and Southern then Eastern Africa. By this time, secondary cities and towns in the areas of the 'first wave' were being hit. The fourth wave, just starting now, is hitting South Asia and West Africa.

Latin America has led the way among developing regions in the growth of the supermarket sector. While a small number of supermarkets existed in most countries during and before the 1980s, they were primarily domestic-capital firms, and tended to exist in major cities and wealthier neighbourhoods. That is, they were essentially a niche retail market serving at most 10-20 percent of national food retail sales in 1990. However, by 2000, supermarkets had risen to occupy 50-60 percent of national food retail among the Latin American countries, almost approaching the 70-80 percent share for the United States or France. Latin America had thus seen in a single decade the same development of supermarkets that the United States experienced in five decades.

The supermarket share of food retail sales for the leading six Latin American countries averages 30-75 percent: Brazil has the highest share, followed by Argentina, Chile, Costa Rica, Colombia and Mexico. Those six countries account for 85 percent of the income and 75 percent of the population in Latin America. Other countries in the region have also experienced rapid growth of their supermarket sectors, but these started later and from a lower base. For example, supermarkets accounted for 15 percent of national food retail in Guatemala in 1994, and by 2002 accounted for 35 percent (Reardon and Berdegué 2002).

The development of the supermarket sector in East and Southeast Asia is generally similar to that of Latin America. The 'take-off' stage of supermarkets in Asia started, on average, some 5-7 years behind that of Latin America, but is registering even faster growth. The average processed/packaged-food retail share over several Southeast Asian countries – Indonesia, Malaysia, and Thailand – is 33 percent, but is 63 percent for East Asian countries – Republic of Korea and Taiwan. The supermarket sector in China is growing the fastest in the world; it started in 1991, and by 2003 had 55 billion dollars of sales, 30% of urban food retail, and is growing 30-40% a year (Hu et al. 2004).

Supermarket diffusion is also occurring rapidly in Central and Eastern Europe (CEE). This is occurring in three waves, with the earliest (mid 1990s) takeoff of the sector in northern CEE (Czech Republic, Hungary, Poland, Slovakia) where the share of supermarkets in food retail now stands at 40-50%. The second wave is in southern CEE (such as Croatia, Bulgaria, Romania, Slovenia) where the share is on average 25-30% but growing rapidly. The third wave is in Eastern Europe, where income and urbanization conditions were present for a take-off but policy reforms lagged, so that the share in for example Russia is still only 10% – but identified by international retailers as the number 1 retail FDI destination (Dries et al. 2004).

The most recent⁶ venue for supermarket take-off, or at least pre-take-off, is in Africa, especially in Eastern and Southern Africa. South Africa is the front runner, with roughly a 55 percent share of supermarkets in overall food retail and 1700 supermarkets for 35 million persons. The great majority of that spectacular rise has come since the end of Apartheid in 1994. To put these figures in perspective, note that 1700 supermarkets is roughly equivalent to 350,000 mom and pop stores, or 'spazas', in sales. Moreover, South African chains have recently invested in 13 other African countries as well as India, Australia and the Philippines. Kenya is the other front-runner, with 300 supermarkets and a 20% share of supermarkets in urban food retail (Neven and Reardon 2004). Other African countries are starting to experience

the same trends: for example, Zimbabwe and Zambia have 50-100 supermarkets each (Weatherspoon and Reardon 2003). Reardon and Timmer (in press) note that the retail transformation-lagging parts of Africa might constitute in the future a 'fourth wave'.

Second, within each of the four very broad regions there are large differences over sub-regions and countries. Usually, these can be supermarket-growth-ranked according to the variables in the supply and demand model presented above. In Latin America, for example, Brazil with a 75% share of supermarkets in food retail store sales can be contrasted with Bolivia with at most 10%; in developing Asia, Korea with 60% can be contrasted with India with 5%; and in Africa, South Africa with 55% can be contrasted with Nigeria with 5%; Hungary or Poland with shares of 40-50% can be contrasted with Russia with 10%.

Third, the take-over of food retailing in these regions has occurred much more rapidly in processed, dry and packaged foods such as noodles, milk products and grains, for which supermarkets have an advantage over mom and pop stores due to economies of scale. The supermarkets' progress in gaining control of fresh-food markets has been slower, and there is greater variation across countries because of local habits and responses by wetmarkets and local shops. Usually the first fresh-food categories for the supermarkets to gain a majority share include 'commodities' such as potatoes, and sectors experiencing consolidation in first-stage processing and production: often chicken, beef and pork, and fish.

A rough rule of thumb, applicable from Latin America, is that the share of supermarkets in fresh foods is roughly one-half of the share in packaged foods. For example, in Brazil, where the overall food retail share of supermarkets is 75 percent, the share in Sao Paulo of fresh fruits and vegetables is only 50 percent; in Argentina, the shares are 60 and 25%, respectively. This kind of rough '2 or 3 to 1' ratio appears to be typical in the regions. This difference is also common in developed countries: in France, supermarkets have 70 percent of overall food retail, but only 50 percent of fresh fruits and vegetables. The convenience and low prices of small shops and fairs, with fresh and varied produce for daily shopping, continue to be a competitive challenge to the supermarket sector, with usually steady but much slower progress for supermarkets requiring investments in procurement efficiency.

Despite the slower growth in the supermarkets' share of the domestic fresh-produce market, it is very revealing to calculate the absolute market that supermarkets now represent, even in produce, and thus how much more in other products where supermarkets have penetrated faster and deeper. For example, Reardon and Berdegue (2002) calculate that supermarkets in Latin America buy 2.5 times more fruits and vegetables from local producers than all the exports of produce from Latin America to the rest of the world.

Fourth, the supermarket sector in these regions is increasingly and overwhelmingly multi-nationalized (foreign-owned) and consolidated. The multinationalization of the sector is illustrated in Latin America where global multinationals constitute roughly 70-80% of the top five chains in most countries. This element of 'FDI-driven' differentiates supermarket diffusion in these regions from that in the US and Europe. The tidal wave of FDI in retail was mainly due to the global retail multinationals, Ahold, Carrefour and Wal-mart, smaller global

chains such as Casino, Metro, Makro, and regional multinationals such as Dairy Farm International (Hong Kong) and Shoprite (South Africa). In some larger countries domestic chains, sometimes in joint ventures with global multinationals, have taken the fore. For example, the top chain in Brazil is Pão de Açúcar (in partnership with Casino, of France, since 1999), and the top chain in China is the giant national chain Lianhua (based in Shanghai), with some 2500 stores, in partial joint venture with Carrefour.

The rapid consolidation of the sector in those regions mirrors what is occurring in the US and Europe. For example, in Latin America the top five chains per country have 65 percent of the supermarket sector (versus 40 percent in the US and 72 percent in France). The consolidation takes place mainly via foreign acquisition of local chains (and secondarily by larger domestic chains absorbing smaller chains and independents). This is done via large amounts of FDI: for example, in the first eight months of 2002, five global retailers (British Tesco, French Carrefour and Casino, Dutch Ahold and Makro, and Belgian Food Lion) spent 6 billion bhat, or \$120 million in Thailand. Wal-mart spent \$660 million over 2002 in Mexico to build new stores.

These trends of multi-nationalization and consolidation fit the supply function of our supermarket diffusion model. Global and retail multinationals have access to investment funds from own liquidity and to international credit that is much cheaper than is the credit accessible by their domestic rivals. The multinationals also have access to best practices in retail and logistics, some of which they developed as proprietary innovations. Global retailers adopt retailing and procurement technology generated by their own firms or, increasingly, via joint ventures with global logistics multinationals – such as Carrefour (France) does with Penske Logistics (U.S.) in Brazil. Where domestic firms have competed, they have had to make similar investments; these firms either had to enter joint ventures with global multinationals, or had to get low cost loans from their governments (e.g. the Shanghai-based national chain), or national bank loans.

Fifth, again as predictable from the diffusion model above, the inter-spatial and inter-socioeconomic group patterns of diffusion have differed over large and small cities and towns, and over richer, middle and poor consumer segments. In general, there has been a trend from supermarkets' occupying only a small niche in capital cities serving only the rich and middle class – to spread well beyond the middle class in order to penetrate deeply into the food markets of the poor. They have also spread from big cities to intermediate towns, and in some countries, already to small towns in rural areas. About 40 percent of Chile's smaller towns now have supermarkets, as do many small-to-medium-sized towns even in low-income countries like Kenya. And supermarkets are now spreading rapidly beyond the top 60 cities of China in the coastal area and are moving to smaller cities and to the poorer and more remote northwest and southwest and interior.

DEVELOPMENT OF THE INCENTIVE AND CAPACITY TO IMPLEMENT PRIVATE STANDARDS – VIA SUPERMARKETS’ TRANSFORMING PROCUREMENT SYSTEMS

We have found that supermarket chains have a dual objective – one qualitative (to increase quality and eventually safety of the product) and one quantitative (to reduce costs and increase volumes procured). Supermarket chains have a difficult time meeting those objectives by using the traditional wholesale sector to procure their products. Here is a statement from Javier Gallegos (pers. comm., 2003), the head of marketing for Hortifruti (a specialized/dedicated wholesaler for the CARHCO chain in Central America), enumerating the deficiencies of the traditional market in the face of a supermarket’s needs:

“The realities and problems of our growers and markets are as follows. The market is fragmented, unformatted, unstandardized. The growers produce low-quality products, use bad harvest techniques, there is a lack of equipment and transportation, there is deficient post-harvest control and infrastructure, there is no market information. There are high import barriers and corruption. The informal market does not have: research, statistics, market information, standardized products, quality control, technical assistance, infrastructure.”

Driven to close the gap between their supplies and their needs, supermarket chains in developing regions have been shifting over the past few years away from the old procurement model based on sourcing products from the traditional wholesalers and the wholesale markets, toward the use of four key pillars of a new kind of procurement system: (1) specialized procurement agents we call ‘specialized/dedicated wholesalers’ and away from traditional wholesalers; (2) centralized procurement through Distribution Centres (DCs), as well as regionalization of procurement; (3) assured and consistent supply through ‘preferred suppliers’; (4) high-quality and increasingly safe products through private standards imposed on suppliers.

The first three pillars (organizational change in procurement) together make possible the fourth (institutional change in procurement – that is, the rise of private standards first for quality and increasingly for safety of FFV). Below, we lay out a conceptual framework for understanding that shift, and then discuss the four pillars.

Determinants of change in supermarket procurement systems

Technology change in the procurement systems of supermarkets in developing regions is a key determinant of change in the markets facing farmers. Technology (defined broadly as physical production practices as well as management techniques) diffusion in the supermarket sector in developing countries can also be conceptualized as a system of demand and supply for new technology. Here we focus on technology for retail product-procurement systems as these choices most affect suppliers.

Demand for technology change in food-retailer procurement practices is, in general, driven by the overall competitive strategy of the supermarket chain.

However, specific choices are usually taken by procurement officers, e.g. in the produce procurement division. Hence it is crucial to understand the objective function of these officers in supermarkets in developing countries. We present a working hypothesis based on numerous interviews with these individuals.

The decisions related to purchasing products for retail shelves rests with the procurement officers in supermarket chains. Whether in the United States, Europe, Nicaragua, Chile or China, they are under several common 'pressures' from supermarket managers, operating under intense competition and low average profit margins. They are caught between the low-cost informal traditional retailers selling fresh local products on one side, and efficient global chain competitors like Walmart on the other side. The procurement officers strive to meet this pressure by reducing purchase and transaction costs and raising product quality.

Reflecting the varied demand of consumers, procurement officers seek to maintain diversity, year-round availability, and products with assured quality and safety levels.

Based on those objectives, we outline a rough model for demand (by procurement officers) and supply (by the supermarket chain to those divisions) of change in procurement systems (technology, organization, institutions). The demand function incentives and capacity variables are discussed first. Incentives include: (1) the ability of the traditional wholesale system to meet procurement-officers' objectives without the chain having to resort to costly investments in an alternative system. Usually procurement officers find this ability low, as Boselie (2002) shows in the case of Ahold for fresh produce in Thailand. Compared with the North American or the European market, produce marketing in these regions is characterized by poor institutional and public physical infrastructure support. Private infrastructure, such as packing houses, cold chains and shipping equipment among suppliers and distributors is usually inadequate. Risks and uncertainties, both in output and in suppliers' responsiveness to incentives, are high. The risks may arise due to various output and input market failures, such as inadequacies in credit, third-party certification and market information; (2) a second incentive is the need to reduce costs of procurement by saving on inputs, in this case purchased-product costs and transaction costs with suppliers; and (3) the incentive to increase procurement of products that can be sold at higher margins, hence diversify the product line into 'products' rather than mere commodities (bulk items).

Capacity to demand includes: (1) the consumer segment served by the chain. This is crucial because higher-value products cannot be marketed to poorer consumers and only cost considerations are paramount; and (2) the resources of the procurement office. These include the number of staff to manage procurement and thus ability to make organizational and institutional changes in procurement systems such as operating a large distribution centre. A variable that reflects both incentive and capacity is the size of the chain and thus product throughput in the procurement system. Usually retailers have a 'step level' or threshold throughput where they go from per-store to centralized procurement as economies of scale permit and require.

The supply of procurement technology by the chain as an overarching enterprise, to the specific product-category procurement office or offices, such as the fresh-foods categories, is an investment and is a function of several variables. The

incentive variables include: (1) the importance of the product category to the chain's profits and marketing strategy. For example, we observed a small chain in an intermediate city in China that invested in building a distribution centre (DC) for processed/packaged foods but continues to buy fresh foods from the spot market (traditional wholesalers), while a national chain invested in a large DC for packaged/processed foods and has recently built a large DC for fresh foods as throughput has attained a critical mass and these products have attained a threshold importance in profits and chain marketing strategy; (2) the need for assurance of various product attributes in order to meet customers' demands (expansion of product choice, attribute consistency over transactions, year-around availability, quality and safety); and (3) the costs of the technology, such as costs of transport, construction, logistics services, etc.

The capacity variables include: (1) the size of the chain and/or access to financial capital to make the investments; and (2) the capacity of the chain to manage complex and centralized procurement systems.

The incentive and capacity determinants of demand for and supply of changes in procurement system technology vary markedly over the three regions and countries, and within countries, over chains and zones. Several broad patterns are observed in the procurement technologies that result (Reardon et al. 2003a; Berdegué et al. 2005).

First pillar of change: toward centralization and regionalization of procurement

There is a trend toward centralization of procurement (per chain). As the number of stores in a given supermarket chain grows, there is a tendency to shift from a per-store procurement system to a distribution centre serving several stores in a given zone, district, country or region (which may cover several countries). This is accompanied by fewer procurement officers and increased use of centralized warehouses. Additionally, increased levels of centralization may also occur in the procurement decision-making process and in the physical produce distribution processes. Centralization increases efficiency of procurement by reducing coordination and other transaction costs, although it may increase transport costs by extra movement of the actual products.

The top three global retailers have made or are making shifts toward more centralized procurement systems in all the regions in which they operate. Wal-Mart uses a centralized procurement system in most of its operating areas. Having centralized its procurement in France, Carrefour has been moving quickly to centralize its procurement system in other countries. For example, in 2003 and 2004 Tesco and Ahold have established large distribution centres in Poland, Hungary and the Czech Republic. In 2001 Carrefour established a distribution centre in São Paulo to serve three Brazilian states (with 50 million consumers) with 50 hypermarkets (equivalent to about 500 supermarkets) in the Southeast Region. Similarly, Carrefour is building a national distribution system with several distribution-centre nodes in China, while Ahold centralized its procurement systems in Thailand (Boselie 2002). The list goes on.

Regional chains, such as China Resources Enterprises (CRE) of Hong Kong – with Vanguard stores in southern China, are also centralizing their procurement systems. CRE is tenth in retail in China and has 17 large stores in the provinces of Shenzhen and Guangdong. In anticipation of growth following its planned \$680 million investment in China over the next five years, a shift from store-by-store procurement to a centralized system of procurement covering each province is underway. Two large distribution centres were completed in 2002. The distribution centre in Shenzhen is 65,000 square meters and will be able to handle 40 department stores and 400 superstores/discount centres.

Moreover, the regional (over several countries) chains are moving toward sourcing regionally. I hypothesize that this will be, over the next decade, a factor inducing greater intra-regional trade and economic integration in regions. For example, in January 2002, a regional chain called Central American Retail Holding Company (CARHCO) was formed, composed of a Costa Rican chain (CSU Supermarkets) that had expanded into Honduras and Nicaragua, a Guatemalan chain (La Fragua) that expanded into El Salvador, and Ahold. The chain started with 253 stores in five countries and 1.3 billion dollars of sales, a large operation with about two-thirds of the supermarket sector in those countries. It started by sourcing only locally (the chain in each country mainly sourcing from local producers). However, over the past year, and with plans to increase this in the near future, the chain is starting to source regionally – say sourcing most of its dry beans from Nicaragua for the whole chain.

Second pillar of change: shift toward use of specialized wholesalers and logistics firms

There is growing use of specialized/dedicated wholesalers. They are specialized in a product category and dedicated to the supermarket sector as their main clients. The changes in supplier logistics have moved supermarket chains toward new intermediaries, side-stepping or transforming the traditional wholesale system. The supermarkets are increasingly working with specialized wholesalers, dedicated to and capable of meeting their specific needs. These specialized wholesalers cut transaction and search costs, and enforce private standards and contracts on behalf of the supermarkets. The emergence and operation of the specialized wholesalers have promoted convergence, in terms of players and product standards, between the export and the domestic food markets. Moreover, there is emerging evidence that when supermarket chains source imported produce they tend to do so mainly via specialized importers. For example, hypermarkets in China tend to work with specialized importers/wholesalers of fruit, who in turn sell nearly half of their imported products to supermarket chains. Similarly, Hortifruti functions as the buying arm of most stores of the main supermarket chain in Central America, as does Freshmark for Shoprite in Africa.

Moreover, there is a trend toward logistics improvements to accompany procurement consolidation. To defray some of the added transport costs that arise with centralization, supermarket chains have adopted (and required that suppliers

adopt) best-practice logistical technology. This requires that supermarket suppliers adopt practices and make physical investments which allow almost frictionless logistical interface with the chain's warehouses. The 'Code of Good Commercial Practices' signed by supermarket chains and suppliers in Argentina illustrates the use of best-practice logistics by retail suppliers (Brom 2004). Similar trends are noted in Asia. For example, Ahold instituted a supply improvement programme for vegetable suppliers in Thailand, specifying post-harvest and production practices to assure consistent supply and improve the efficiency of their operation (Boselie 2002).

Retail chains in the three regions increasingly outsource (sometimes to a company in the same holding company as the supermarket chain) logistics and wholesale distribution function, entering joint ventures with other firms. An example is the Carrefour distribution centre in Brazil, which is the product of a joint venture of Carrefour with Cotia Trading (a major Brazilian wholesaler distributor) and Penske Logistics (a US global multinational firm). Similarly, Wu-mart of China announced in March 2002 that it will build a large distribution centre to be operated jointly with Tibbett and Britten Logistics (a British global multinational firm). Ahold's distribution centre for fruits and vegetables in Thailand is operated in partnership with TNT Logistics of The Netherlands (Boselie 2002).

Third pillar: toward preferred-supplier systems

Many supermarket chains are undertaking institutional innovation by establishing contracts with their suppliers – in particular via their dedicated, specialized wholesalers' managing a preferred-supplier system for them. This trend is similar to that in agro-processing during the past decade (Schejtman 1998). The contract is established when the retailer (via their wholesaler or directly) 'lists' a supplier. That listing is an informal (usually) but effective contract⁷, in which delisting carries some cost, tangible or intangible. We have observed such contracts in all the regions under study. Contracts serve as incentives to the suppliers to stay with the buyer and over time make investments in assets (such as learning and equipment) specific to the retailer specifications regarding the products. The retailers are assured of on-time delivery and the delivery of products with desired quality attributes.

These contracts sometimes include direct or indirect assistance for farmers to make investments in human capital, management, input quality and basic equipment. Evidence is emerging that for many small farms these assistance programmes are the only source of such much valued inputs and assistance – in particular where public systems have been dismantled or coverage is inadequate. In some cases, the assistance is indirect – such as the case of Metro supermarket chain (a German chain) in Croatia intervening with the bank (noting that the suppliers would have contracts) to provide a 'collateral substitute' so would-be strawberry suppliers could make needed greenhouse investments (Reardon et al. 2003b). This constitutes resolution by retailers or their wholesaler agents of idiosyncratic factor market failures facing small producers – such as credit, information, technical assistance, and so on. There is evidence of this in the processing sector also, for example in the CEE (Gow and

Swinnen 2001; Dries and Swinnen 2004). Some cases of this are remarkable in their extent and nature. Codron et al. (2004) note a case of a Turkish retailer MIGROS which contracts with a whole village nearby its Antalya market to grow 1000 tons of tomatoes during the summer. Hu et al. (2004) describe the case of Xincheng Foods in Shanghai, acting as a specialized wholesaler for the top two chains in China. Xincheng long-term leases (from townships) 1000 hectares of prime vegetable land, hires migrant labour, installs greenhouses and uses tractors and drip irrigation (thus changing production technology), and produces in-house large quantities of high-quality vegetables for the supermarket chains and export. It also has contracts with 4500 small farmers to add to its own production. This kind of operation can be described as a major 'agent of change' in the Chinese agro-food economy.

While the contracting is quite recent for produce, it has been a practice for a half decade or more among chains sourcing from processed-product suppliers. Manufacturers of private-label processed fruit and vegetable and meat and cereals products typically operate under formal contract with the supermarkets. Supermarket chains have contracts with processing firms, which in turn may sign contracts with producers. For example, the processing firm IANSAFRUT supplies processed vegetables to supermarkets in Chile under such an arrangement (Milicevic et al. 1998). Similarly, processed fruits and vegetables are sold under the label SABEMAS for the supermarket CSU in Costa Rica, and various firms produce under contract the products for the private label. As retail sales of private label products continue to grow, such contract arrangements are expected to increase in Latin America and Asia.

Fourth pillar: the rise of private standards

While food retailing in these regions previously operated in the informal market, with little use of certifications and standards, the emerging trend indicates a rapid rise in the implementation of private standards in the supermarket sector (and other modern food industry sectors such as medium/large-scale food manufactures and food service chains). The rise of private standards for quality and safety of food products, and the increasing importance of the enforcement of otherwise-virtually-not-enforced public standards, is a crucial aspect of the imposition of product requirements in the procurement systems. In general, these standards function as instruments of coordination of supply chains by standardizing product requirements over suppliers, who may cover many regions or countries. Standards specify and harmonize the product and delivery attributes, thereby enhancing efficiency and lowering transaction costs. In turn, the implementation of these standards depends crucially on the establishment of the new procurement-system organization noted in the three pillars above.

Below we lay out a conceptual framework for the diffusion of private standards among supermarkets, and then provide a taxonomy and illustrations of their use.

Conceptual framework for the diffusion of private standards

The usual technology-adoption model has adoption as a function of a vector of incentive variables (relative output and input prices and risk) and a vector of capacity variables, reflecting the would-be adopter's capacity to respond to incentives (capital assets such as human, organization, physical, social and financial capital), and various 'shifters'. This general adoption framework can be applied to 'institutional adoption' such as the adoption of private standards by supermarket chains' procurement arms or agents in developing regions.

The incentives include the following.

First, the chain has an incentive to implement private standards where there are missing or inadequate public standards, so that private standards are a substitute for the missing institution. As the large chains (and processing firms) competed in national and regional markets and attempted to differentiate their products to protect and gain market share, they found that the public standards needed for that differentiation did not exist (common in developing regions, see Stephenson 1997), or relatively undifferentiated public standards existed, inherited from the protected, homogeneous commodity markets that were common before market liberalization and structural adjustment. The latter were inadequate either to meet consumer demand for product differentiation and quality differences, or to reward producers for their investments in quality and safety (Reardon et al. 1999; Reardon and Farina 2001). As noted above, governments in these regions tend to have the incentive and capacity to implement public standards mainly for the export-market interface, and much less so for domestic markets. Moreover, public standards tend to be applied where they are 'public goods' such as for plant and animal health. At the opposite extreme are quality standards that are typically private goods, differentiating products, and are the first and foremost domain of private standards.

Between the two are food safety standards. In principal, these should be considered public goods and set and enforced by governments. The issue here is not conceptual but rather practical – governments might occasionally establish regulations but usually do not have the capacity to monitor and enforce them (for the case of Guatemala, see Flores-Navas 2004). Yet supermarket chains have incentives to set private safety standards, at least for 'at risk' products such as leafy greens, berries and other products where pesticide residuals and bacteria can produce short-medium-run health problems among their clientele. In some countries there are liability laws that make this a legal issue. Yet even where there are not laws, there are two other reasons to have such standards. On the one hand, as noted above, most of the chains are global or regional, and a health crisis caused by an unsafe product in one country can hurt sales and stock prices in the region or globally. On the other hand, safety standards – and the belief on the part of the consumer that chains are able to actually monitor and enforce them – gives a big advantage to supermarkets over traditional retailers, and thus is a major competitive instrument.

Of course, where there are public standards for safety, private standards can meet or exceed the stringency of public standards thus affording 'domain defence',

limiting exposure to penalties from public regulations (Caswell and Johnson 1991). Communicating to the urban or developed country consumer that the private standards exceed the stringency and enforcement of public G&S encourages consumers to buy products from countries that they may see otherwise as having lax quality and safety regulations.

Second, private standards are used to increase profits through facilitating product differentiation – and thus provide incentives to suppliers to make asset-specific investments, and to consumers to satisfy their desire for product diversity by shopping at the chain. Supermarkets (as well as large-scale processors and fast-food chains⁸) use private standards to differentiate their product lines (adding SKUs and thus product diversity) and differentiate their products from each other and from traditional actors. Private standards make product differentiation easier and more flexible, allowing companies to take advantage of new market opportunities ('domain offense', Caswell and Johnson 1991). Consistent implementation of private G&S, plus certification, labelling and branding systems that link high quality and safety standards to the product and the company in the consumer's mind, produces reputation and competitive advantage. One sees this in the application of the Carrefour Quality Certification programme and labels for meat and produce in Mexico, China, Brazil and elsewhere.

Third, chains use private standards to reduce cost and risk in their supply chains. The main cost reduction comes from using process standards to coordinate chains. Farina (2002) and Gutman (2002) illustrate these cost savings in the case of supermarkets and dairy products in Brazil and Argentina. Chains complement private standards with other elements of a "metasystem of quality control" (Caswell et al. 1998), adding elements such as branding to the system governance structure. Building trust and reputation around the visible symbol of a brand name and label makes standards systems credible to consumers (Northen and Henson 1999). To build consumer confidence (and thus build market volume and reduce market risk) by consistency in standards implementation, tight vertical coordination is needed, especially for process standards – hence the use of the organizational structure of procurement, plus contracts, noted above.

An important element of this is the reduction of coordination costs in procurement systems that become progressively broader in geographic scope, as the discussion of the first pillar above establishes as a trend. Regional and global chains want to cut costs by standardizing over countries and suppliers as this occurs – which induces a convergence with the standards of the toughest market in the set, including with European or US standards. One sees this in Wal-mart between Mexico and the US, one sees this in the Quality Assurance Certification used by Carrefour over its global operations that include developing countries, one sees this in the regional chains such as CARHCO discussed above. In some cases this has meant that global chains actually apply public standards from their developed-country markets as private standards to suppliers to their local developing-country markets, such as the use of FDA standards for some products by US chains. The chains might also use private standards from the developed country portions of their markets, such as European chains using EUREPGAP standards for some produce and meat items applied to suppliers in developing-country markets.

The capacity variables involved in the diffusion of private standards are as follows.

First, the chains, or their specialized/dedicated wholesalers, must have the requisite degree of buying power to impose private standards on suppliers – either because the chain has some oligopsonistic power, or because it offers higher producer prices, or it offers other assistance to producers. The size of the front-runner chains (the same ones that are the main implementers of private standards) relative to the urban market certainly gives them the buying power (for example, Carrefour has about 25% of all food retail in Argentina, Wal-mart has 20% of all food retail in Mexico).

Large chain size is necessary but not sufficient – as chains need the procurement organization changes noted above, in particular distribution centres that allow the product procurement to be centralized allowing efficient standards monitoring, and implicit contracts (via the preferred-supplier systems) that allow traceability and a delivery vehicle for the standards.

Sometimes chains also offer prices higher than the wholesale-market prices to producers who meet their standards; little systematic information exists about this point, but in general we have found that the premium is around 10-15%, just enough to meet additional costs implied by meeting the standards. But sometimes no price premium is offered: what then is the incentive for the producer to meet the (usually more stringent) private standards? The answer is related to the discussion of the preferred-supplier systems above: chains (or their specialized/dedicated wholesalers) sometimes offer technical assistance, input credit or collateral substitutes in the form of a contract, and transport to their suppliers. (An example is Hortifruti's technical assistance and credit to vegetable suppliers in Costa Rica.) The technical assistance and credit resolve idiosyncratic factor market failures that often plague producers after public systems for these items were dismantled during the structural adjustment period – and one can hypothesize that public systems were never nor are now adequate to meet the kinds of upgrading needs that face suppliers to supermarkets.

Second, all of the above is necessary but not sufficient to implement private standards – the final ingredient is the capacity of producers to meet the standards. A poignant illustration of this was the limitation felt by the La Fragua chain in Guatemala to implement broadly its new 'Paiz Seal' quality and safety certification system in the past two years. They found the following: (1) for key bulk items such as Roma tomatoes, there were simply not enough producers with the capacity to supply over the full year or sufficient volume to meet the chain's needs, and so the chain has to rely on traditional wholesalers to bulk the product from many small producers – obviating traceability and imposition of safety standards and quality consistency; (2) for key 'at risk' items such as leafy greens and berries, the chain has been forced to take a gradual approach of approving suppliers, at a rate much slower than it wanted, simply because few producers can make the needed investments, and those producers have export-market alternatives. Because of these limitations on finding enough suppliers that can meet the private standards, some chains take a position in between no application of standards and full, rigorous application. For example, CSU Supermarkets/Hortifruti in Costa Rica monitors standards compliance, but then is loathe to 'delist' suppliers who violate standards, even safety

standards. Instead, when a problem is identified, they increase technical assistance combined with warnings, with some eventual delisting (hence, the combination of a carrot and stick approach, but not too stern so as to find themselves with inadequate supply) (Berdegué et al. 2005).

Taxonomy and illustrations of interfaces between procurement systems and private standards

In this section I draw from a Central American illustration in Berdegué et al. (2005). The degree to which this overall model of procurement systems is described by the 'four pillars' above varies across the region, and across chains. The sequence here is from the 'traditional procurement system' of Central American supermarkets (decentralized, relying on traditional wholesalers), to modern systems with an emphasis on the four pillars discussed above.

Type 1: Total reliance on traditional wholesalers delivering to individual stores. A few relatively small chains and all the independent supermarkets, such as Unisuper in Guatemala (12 medium-sized and 12 relatively small supermarkets) or La Colonia in Nicaragua (7 stores), continue to rely on the traditional system in which traditional wholesalers deliver produce to each individual store and only minimal quality standards are applied (requesting sorting from the wholesalers). In these chains, quality standards are low (basically relying on what is available that day in the wholesale market) and their control is based on rejecting high proportions of wasted produce after it can no longer be sold.

Type 2: Outsourced and decentralized procurement system. This is a system utilized by small-medium chains, such as Megasuper in Costa Rica (with 15% of the supermarket market) or PriceSmart in Costa Rica, Honduras and El Salvador (with a few stores in each country). These chains lack the critical mass in terms of produce sales, to justify a centralized operation. Instead, they rely on one or two specialized wholesalers, who in turn source mostly from the central wholesale markets and, in some products, from individual growers. Quality standards are higher in this system than in the previous one, both because the chains are larger and, in some cases, are focused on a middle-high- to high-income clientele (e.g., that of PriceSmart), and because the specialized wholesalers are also stronger and fully formal firms, as compared to the traditional wholesalers that are common in type-1 procurement systems. Yet, quality standards in this type 2 are still strictly limited to cosmetic and flavour characteristics, as much of the supply is coming from the central markets, and it thus becomes impossible to control for variables other than those that can be appreciated rapidly by simply looking at the product.

Type 3: Decentralized mixed procurement system. This type of arrangement can be found in chains which are about to make the switch to a centralized procurement system. An example is that of SuperSelectos in El Salvador (which is tied for first place with La Fragua, with about 55 supermarkets and a chain of small-format

stores). The chain still is largely reliant on one or two specialized wholesalers. From one wholesale company, Gladys de Alvarado, it gets 70% of its regional produce, nearly all from Guatemala; Gladys de Alvarado has, in turn, a system of preferred suppliers in Guatemala and also buys from the wholesale market and from other specialized wholesalers there. However, SuperSelectos itself still has a significant complement of direct sourcing from individual growers and from preferred wholesalers/suppliers in the central wholesale markets. Relying on more than one supplier gives more leverage to the chain to demand higher quality and lower price from the main specialized wholesaler. Thus, quality standards tend to be higher than in the more standard type-2 system and the type-1 system, but again limited to those characteristics that can be evaluated rapidly and simply by expert observation.

Type 4: Centralized passive procurement system. This arrangement allows the chain to define and enforce much stricter quality as well as begin, in a limited subset of producer-suppliers and products, to implement safety standards, including, for example, standards on pesticide residues or presence of pathogens such as *E. coli*. The best example in the region is that of La Fragua in Guatemala.

La Fragua, with its various formats (such as Supermercados Paiz and HiperPaiz), has 65% of the supermarket sector in Guatemala. La Fragua has also moved in the past five years to centralize its FFV procurement through its subsidiary Disfruve. In 1999, only 20% of its procurement was 'centralized' (procured and then distributed to the stores through the small warehouse at Disfruve) – and by end 2004, 98% of its procurement is centralized (through its large, modern DC built in 2002). In 1999, about 25% of its FFV came from producer-suppliers (as opposed to wholesaler-suppliers delivering from rural areas or from the wholesale market) – and by end 2004 more than 40% comes from producer-suppliers. During the five years, the volume moved by Disfruve quintupled to keep pace with the rapidly growing chain. The combination of centralization and progressive shift toward use of producer-suppliers (sourcing directly) is providing Disfruve with a growing capacity to enforce more stringent quality standards at lower monitoring cost. The standard has been formalized in writing for each product, and a well-trained group of employees receives and inspects each shipment. Those with the highest rates of compliance get rewarded with orders for increased volumes of FFV during the next weeks, and the opposite happens to those suppliers who perform less well.

We call this a passive procurement system because from the point of view of La Fragua, it is up to the supplier to meet its rules and to find the best way to do so. The chain simply sets out clear rules and a monitoring, enforcement and incentive system.

Here is the point in this continuum of development of procurement organization and institutions where produce safety standards make their first appearance. La Fragua has seen the incentive to move one step further and establish in June 2003 a formal quality and safety seal, the 'Paiz Seal' (after its main chain, Paiz). This retailer produce-safety seal is conferred on producers who agree to sell the products with the seal only to La Fragua, and who pass the test of the third-party certification scheme, PIPAA. La Fragua wants to move the above safety/quality standard/seal

from voluntary to mandatory over the next year or two. At present, however, it plans on continuing the 'passive' system where it is the choice, responsibility – and burden – of the supplier to meet the production and post-harvest level requirements of this certification. There is no premium planned, only preference in sourcing and eventually access to sales.

Another transition point is occurring in this system: starting in mid 2003, La Fragua started (albeit with a small share, about 10%, of its preferred producer-suppliers) to shift toward a combination 'passive/active' system by hiring an agronomist to train producers in Good Agricultural Practices toward obtaining and maintaining the certification; by March 2004, 25 medium-sized growers had obtained the certification, in particular for 'high risk' products such as salad tomatoes, bell peppers, endives, lettuce, pineapples, carrots and strawberries.

Type 5: Centralized proactive procurement system. The major difference between this system and the previous one is that in this case the supermarket chain establishes a technical assistance and training programme to help its suppliers in making the transition to higher quality and safety standards. The only example in the region is that of CSU supermarkets. CSU has 80% of the supermarket sector in Costa Rica. Since 1972 CSU has relied on a specialized, dedicated wholesaler, Hortifruti, for its FFV procurement. Hortifruti is a company in the same holding company as CSU.

Until about eight years ago, Hortifruti relied mainly on the traditional wholesale market, buying in bulk, delivering lots to its DC, then breaking down the lots and sending small lots around to the CSU stores. As CSU grew into a chain of 97 stores in Costa Rica, the need to procure large volumes and standardize quality became crucial. Over the past 3-4 years Hortifruti moved nearly fully away from reliance on the traditional wholesale market (today it only buys 15% of its produce from the wholesale market and only 10% from imports via a specialized fruit importer).

But Hortifruti went a step further. Under the impetus of closing the price gap with wetmarkets that was impeding their penetration of the FFV market in Costa Rica, and increasing the quality gap, Hortifruti combined the above shift, with the establishment of a network of approximately 200 preferred FFV suppliers. Fifty of these are mainly fresh-processors (such as of fresh cuts) and grower/packers that aggregate product from other suppliers. The rest are individual growers or grower/packers. Each supplier must clean, crate or pack in final usable trays the product, and deliver to the Hortifruti DC. The attraction for the growers is the promise of stable access to an attractive and growing market, at prices that are close to but usually a bit above the wholesale market, plus technical assistance, and for the small farmers, input credit. In May 2003 Hortifruti conferred on a tenth of their producers, mainly medium farmers producing leafy greens, the Hortifruti Quality Seal, which essentially combines the public Sello Azul (for low pesticide use) with Codex standards for *E. coli* plus Hortifruti private quality standards.

IMPLICATIONS FOR PRODUCERS AND AGRICULTURAL DEVELOPMENT:
OPPORTUNITIES AND CHALLENGES FOR PRODUCERS FROM
SUPERMARKETS' PRIVATE STANDARDS

Meeting private standards can present clear opportunities for producers. Adopting standards can open the door to suppliers of selling through supermarket chains that are 'growing' the market in terms of volume, value-added and diversity. A supplier can move from being a local supplier to a national, regional or global supplier. Moreover, private process standards can increase efficiency of firm operations and raise profitability (Mazzocco 1996). The market scope could also increase, compensating for per-unit profit decreases arising from costs incurred to meet the standards.

However, meeting new, more stringent private standards (compared to the traditional system) implies changes in production practices and investments, such as reducing pesticide use and increasing IPM use on farms, or investing in 'electric eyes' in packing sheds and cooling tanks in dairies. Some of these investments are quite costly, and are simply unaffordable by many small firms and farms. It is thus not surprising that the evidence is mounting that the changes in standards, and the implied investments, have driven many small firms and farms out of business in developing countries over the past 5-10 years, and accelerated industry concentration.

The supermarket chains, locked in struggle with other chains in a highly competitive industry with low margins, seek constantly to lower product and transaction costs and risk – and all that points toward selecting only the most capable farmers, and in many developing countries that means mainly the medium and large farmers. Moreover, as supermarkets compete with each other and with the informal sector, they will not allow consumer prices to increase in order to 'pay for' the farm-level investments needed to meet quality and safety requirements. Who will pay for water-safe wells? Latrines and hand-washing facilities in the fields? Record-keeping systems? Clean and proper packing houses with cement floors? The supplier does and will bear the financial burden. As small farmers lack access to credit and large fix costs are a burden for a small operation, this will be a huge challenge for small operators.

It is thus inevitable that standards demanded by consumers are increasingly a major driver of concentration in the farm sector in developing regions. As supermarkets' direct share in the FFV market grows, and as their influence is increasingly felt on the practices of informal markets through competition for the most profitable clients (the middle- and high-income segments) and consumer expectations, the effect of rising standards will spread over the farm sector. While it is very probable that this means that consumers will consume fewer pesticides and harmful microbes, and have better-quality food products, it also means that development programmes, in the context of weak public support systems for agriculture, will have a challenge and a mandate to assist small farmers to make the transition.

NOTES

¹ Thomas Reardon is Professor of Agricultural Economics at Michigan State University. This chapter draws on a series of collaborative research papers on this subject as well as a draft paper prepared for the OECD.

² Several strands stand out: (1) use of public G&S as non-tariff trade barriers against tropical products (e.g., see ECLAC 1998), for Latin America, and Henson and Loader (2001), in general); (2) trends, and in particular, difficulties in harmonization of public G&S in developing regions (e.g., see Stephenson 1997); (3) an incipient literature on the rise of process G&S and their costs of implementation for poor countries and small firms (e.g., see Diaz (1999) in general, and Deodhar and Dave (1999), for India).

³ See for example Farina et al. (2005); Farina (2002); Gutman (2002); Dirven (1999); Jank et al. (1999b); Dries and Swinnen (2004); Farina et al. (2005).

⁴ This is a term we use as shorthand for large-format modern retail stores, such as supermarkets, hypermarkets and discount stores. Our discussion focuses on large format because convenience stores tend to have only a tiny share (3-5%) of modern retail-sector sales.

⁵ This section and the next draw on several publications – in particular on Reardon and Timmer (in press) and Reardon et al. (2003a) for overall trends, and also from other papers such as for Latin America, Reardon and Berdegue (2002), Balsevich et al. (2003) and Berdegue et al. (2005), for Central and Eastern Europe, Dries et al. (2004), for China, Hu et al. (2004), and for Africa, Weatherspoon and Reardon (2003) and Neven and Reardon (2004).

⁶ South Asia is poised at the edge of a take-off, with the share of supermarkets in India at 5%, but identified as number 2 in the top 10 destinations for retail FDI today (Burt 2004).

⁷ ‘Contracts’ is used in the broad sense of Hueth et al. (1999), which includes informal and implicit relationships.

⁸ It has been common for processing firms to create private standards to replace or sidestep public standards and grading systems. Zylberstajn and Neves (1997) and Farina and Furquim de Azevedo (1997) illustrate this for coffee and wheat products in Brazil, Jank et al. (1999a) for dairy products in Brazil, and Farina (2002) for the Nestlé Quality Assurance certification programme for coconut products in Brazil.

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