Regoverning Markets

Small-scale producers in modern agrifood markets

Meso-level restructuring of the food industry in developing countries

Synthesis Report – Meso Study

Thomas Reardon,
Jikun Huang

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Keys to Inclusion of Small-Scale Producers in Dynamic Markets

Meso-Level Restructuring of the Food Industry in Developing Countries

A First Synthesis Report of Component 1: Meso Study

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Note that the authors are the Coordinators of Component 1 of the Regoverning Markets Programme. For the synthesis report of the micro study of Component 1, see Huang and Reardon, 2008.

Regoverning Markets

Regoverning Markets is a multi-partner collaborative research programme analysing the growing concentration in the processing and retail sectors of national and regional agrifood systems and its impacts on rural livelihoods and communities in middle- and low-income countries. The aim of the programme is to provide strategic advice and guidance to the public sector, agrifood chain actors, civil society organizations and development agencies on approaches that can anticipate and manage the impacts of the dynamic changes in local and regional markets.

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1 Introduction

Rapid changes are taking place in the structure and governance of national and regional agrifood markets in developing countries. These are affecting the ability of agriculture to contribute to economic growth, poverty reduction and sustainable rural development. Small-scale agriculture, which supports the livelihoods of the majority of rural poor, is potentially under-prepared for these changes.

In recognition of this challenge an intensive two-year programme (2005-2007) of collaborative research and policy support has been undertaken to discover how small-scale farmers can access agrifood systems under different degrees of restructuring; to extend the research on the implications of restructuring to small-scale producers and SMEs; to shed light on best practice in connecting small-scale producers with dynamic markets; and to bring these findings into the wider policy arena.

The programme focuses on dynamic, restructured, national and regional markets that are displacing traditional food markets. Component 1 of the programme examines the processes and impacts of this restructuring through a comparative, in-depth, empirical analysis of eight country cases (China, India, Indonesia, Mexico, Poland, South Africa, Turkey, and Zambia). The Component includes three modules.

The first two modules, synthesized in the present report, focus on the 'meso' level restructuring of the food industry. By meso is meant the intermediate level between macro, which does not distinguish between different aspects of the food sector, and micro, which does not examine aggregate-level changes in the industry. By the 'food industry' we mean the 'downstream segments' of the agrifood system; these include retailing, processing, and wholesaling (intermediation).

Module 1 focuses on the restructuring of the food industry at the national level over the past ten years or so, including national aggregates and the demand side such as areas of high consumption (e.g., big cities). While most of the studies look at food products overall, Module 1 focuses primarily on the specific categories of food product studied at the local meso and micro levels. These are as follows:

- China: tomatoes and cucumbers
- India: dairy products
- Indonesia: potatoes and tomatoes
- Mexico: strawberries
- Poland: dairy products
- South Africa: tomatoes

- Turkey: tomatoes
- Zambia: beef

Module 2 focuses on the restructuring of the three food industry segments at the local level, mainly in the production zones of the study.

Modules 1 and 2 provide the context and hypotheses for Module 3.

Module 3, synthesized in a companion report, focuses on the impacts of national and local-level restructuring at the 'micro' level, that is on the 'upstream segments' which include farmers and farm-input suppliers.[1]

The rest of this report summarizes the key points made in Modules 1 and 2. It begins with the research questions and a brief description of the methods; it goes on to summaries the cross-country findings in response to the research questions; and finally concludes with some implications specific to the meso restructuring (This does not include the impacts at farm-level which are treated in the micro report).

[1] In practice we have tended to focus on the impacts of the farm sector itself, rather than impacts on suppliers of goods and services to farms such as the rural landless selling labour to the farm sector, or creditors supplying loans.

2 Research questions and methods of the meso modules

The two questions posed in the meso study are:

a) How and why is the restructuring of the food industry taking place? (policy and non-policy reasons), with a focus on the specific products named in the study, but also within the context of food sector restructuring as a whole; and on the national-meso (sectoral) and local-meso (study zone) context.

b) How is the interface between the actors in the food industry and the farmers restructuring? That is, what changes are taking place in the procurement system of the buyers? The segments of the food industry? And why? (Policy and non-policy reasons).

The basic framework applied by the case studies is described in Reardon and Huang (2005). Its key features are:

a) Module 1: The national meso study of food industry restructuring

This module describes and analyses how the food industry has restructured at a national level over a period of ten to 15 years. The key themes for each segment of the industry include:

i. The main patterns in the dynamics of market restructuring (e.g., consolidation, multinationalization, emerging and disappearing market agents); and the determinants of the restructuring (e.g., key macro policy changes, Foreign Direct Investment (FDI), trade liberalization, changes in consumer behaviour and purchasing power);

   This activity is based on secondary data, a literature review and a large number of interviews with key informants in the private sector, in governmental and non-governmental organizations, in universities and research centres, and in producer and SME associations.

ii. Analysis of the trends in the evolution of procurement systems, and where applicable, the relations between them. Procurement systems are analyzed as value chains for the purpose of this activity. This activity includes in-depth interviews with a large number of participants in the market chain, from top managers of major retail and processing firms, wholesale companies and field brokers. For the purposes of comparison, a similar analysis is conducted of the traditional markets and procurement systems for the same product or set of products.

b) The local-meso module, using Participatory Rural Appraisal (PRA)

A second meso-level analysis was undertaken, this time at the local level, in the area where the farm survey was conducted. This analysis was used to extend the meso study conducted at a national level to a specific zone, thus throwing light on the interaction between the downstream segments of the chain, such as retailers, urban wholesalers, and second-stage processors in the large urban areas and in the farming areas. The analysis examines local retailing options facing farmers, first-stage processors, and the spectrum of rural intermediaries, including wholesalers, brokers, and farmer co-operatives (who also act as collectively managed intermediaries for the farmer members).

The local-meso study employed two key methods.

The first was the use of key informants (and in several of the studies, systematic surveys of wholesale markets) in local government, wholesale markets, and producer organizations to characterize empirical changes in the food industry structure. These included growth or consolidation in the numbers of wholesalers, their marketing practices in relation to segments further downstream (such as urban wholesale markets), and their procurement practices from segments upstream (such as field brokers or farmers). The research questions regarding restructuring patterns are similar to those posed at the national level, in particular: what are the changes in industrial organization (consolidation, multinationalization), and institutions that relate to segments of the value chain (such as the use of standards, and explicit or implicit contracts including the use of preferred supplier schemes)?

The second was the use of semi-structured focus groups (using a PRA method) in the local area of the producer-level study zone to understand the reasons for structural changes noted in the step above. The research questions regarding determinants of change are similar to those posed at the national level for the same value chain, and these explore major changes in the context of policy and non-policy variables over time.

Below we present evidence from the meso studies, responding to the research questions noted above. Section 3 focuses on the national level, and Section 4 on the local (study zones) level.

3 Observed patterns in national-level food industry restructuring

3.1 China

Policy drivers

a) A fundamental restructuring policy driver was the 1978 De-collectivization of Agriculture, and the subsequent domestic economy and trade liberalization reforms towards a market economy, particularly those after 1990.

b) From 1992 retail FDI was progressively liberalized, reaching full liberalization in 2005, when China also gained accession to WTO.

c) The retail and wholesale markets are essentially liberalized and *laissez faire* in the absence of government price-setting and product-movement controls. Few taxes are levied except VAT in the formal sector. There are no controls over the entry of wholesalers (such as the licensing one finds in certain countries), and only a minor flat fee for operation in the wholesale market.

d) The government has invested heavily in building the output market economy following the above reforms, investing in public wet markets, public wholesale markets, and even directly in the supermarket sector.

e) Finally, the above policies are accompanied by rapid structural change in the economy:

   i. Income *per capita* grew 750 per cent from 1978 to 2004;

   ii. The share of the urban population grew from 17 to 40 per cent in the same period;

   iii. There was rapid growth in vegetable consumption as diets became more varied.

As shown below, the policies along with urban growth, an increase in *per capita* income and the response of the private sector stimulated the growth of downstream market segments and the rapid restructuring of the retail sector, but with minimum specialization and consolidation in the wholesale sector, and almost no restructuring in the farm sector (which was capped by law).

Retail restructuring

a) The government invested heavily in wet markets in the 1980s, with the number doubling and the volume increasing ten-fold. In the 1990s the numbers continued to increase but at a much slower pace, and after 2000 the number began to decline and the volume stagnated.

b) The government invested in the setting up of supermarkets in 1990, and from the mid 1990s the private sector (domestic and foreign funds), together with public investment, drove a spectacular growth. The number of supermarkets grew from one in 1990 to 53,000 by 2002, and sales increased 130-fold from 1994 to 2002. This growth trend has continued to the present and is expected to continue into the future.

c) The establishment of supermarkets began and grew fastest in the richer eastern region, but they are spreading fast into the central and western regions, in large, medium, and even smaller cities and towns. However, as usual, consolidation has lagged behind spread, and not until the mid 2000s did the first signs of consolidation become apparent. Competition is strong among supermarket chains and between supermarkets and wet markets.

d) The meso study estimates that supermarkets now have 15 per cent of the vegetable retail market in Beijing, and this is growing.

e) The study notes that the restaurant sector has been growing rapidly in Beijing, especially in the 2000s.

f) Interface point: interviews were conducted in six supermarket chains in Beijing. The supply system can be summarized as follows:

   i. 63 per cent of vegetables are bought from the wholesale market;

   ii. 22 per cent are bought from large specialized/dedicated wholesalers (which the study terms 'large farm-product delivery companies') which have outlets in the wholesale market and buy from other wholesalers, directly from farmers or via agents;

   iii. 12 per cent are bought directly (by supermarket staff or agents in the production zones);

   iv. 3 per cent are produced by the chains (on their own land or contracted).

The study noted that for all these, apart from own-production, the buying is carried out in on-the-spot transactions with the farmers, to whom the brokers or wholesalers are indistinguishable.

Thus, there has been a recent but rapid restructuring of the retail sector. The main source of vegetables is from the wholesale market (either from traditional wholesalers, or emerging specialized/dedicated wholesalers), with only minor sourcing direct from the production zones.

Processing restructuring

Over the past decade the vegetable processing sector has grown slowly, as the great majority of vegetables are consumed fresh. As a result this sector is not examined in the study.

Wholesale restructuring

a) Restructuring began with local truck-markets around cities and progressed to the more organized, large-scale wholesale sector. The government invested massively in wholesale markets in the 1990s, with the number tripling and the volume increasing 30-fold. The volume has continued to grow in the 2000s (but less quickly), and there is evidence of consolidation over wholesale markets. For example, the biggest wholesale market in Beijing has grown more quickly that others in the city, and has emerged as the largest in Asia.

b) Wholesale markets in China are composed of many small wholesalers. The meso study examined wholesale markets in Beijing and also in counties in the production study province, Shandong. While the largest wholesale market in Beijing (and in Asia) handles 8,000 tons of vegetables per day, the average wholesaler in Shandong handles only 1-2 tons a day, and the largest, only 25 tons a day. The wholesalers in Beijing buy from farms (direct or via brokers or transporters); those in Shandong buy from farmers who come from surrounding farms to the wholesale markets.

c) The wholesale markets are beginning to restructure in three ways:

   i. There is consolidation over wholesale markets as the largest take a share of the smaller ones;

   ii. The composition of sales destinations from the wholesale market changed between 2000 and 2005: in 2000 wholesalers in the production areas in Shandong sold only to other wholesalers or traditional retailers; by 2005, 15 per cent of the sales of the wholesale markets went to 'restructured downstream' segments, supermarkets, restaurants, and for export. In Beijing, the share of the wholesale sales going to downstream segments increased from 10 per cent in 2000 to 20 per cent in 2005. The meso study suggests that downstream restructuring has had a significant influence on wholesale restructuring.

iii. Specialized/dedicated wholesalers are emerging as noted above.

Farm-sector restructuring

By far the least restructuring is occurring in the farm sector.

a) Production is extremely small scale (on average 0.6 ha). The Land Law allows and encourages land transfer, increased farm size, and consolidation through the land rental market, although farmers are not allowed to buy or sell land. The consolidation of farm land has progressed only very slowly despite the law permitting rental.

b) Most of the perceived production constraints are driven by the market (unprofitability and more lucrative options in the labour markets). There are few regulatory, institutional or physical constraints at the farm level.

c) During the 1990s there was an increase of 140 per cent in the overall land area in China used for vegetable growing, although tomatoes and cucumbers, the study crops, grew much faster than that, at 500 per cent. This has resulted from a shift away from grains. In the study villages, the share of farms growing tomatoes went from 3-7 per cent and those growing cucumbers from 2-4 per cent. This trend is expected to continue.

d) Most of the net increase in the production of tomatoes and cucumbers has resulted from the arrival of new producers, rather than from an expansion of the size of existing farms.

e) There is also technological change, with the adoption of new varieties of greenhouses, and trellis systems.

f) Interface point: according to the village surveys, nearly all farms sell to small wholesalers or brokers, with none contracted to supermarkets or processors. The wholesalers and brokers negotiate terms on the spot and provide no credit, extension, or inputs.

g) The hypothesis that emerges from the meso study (to be tested in the micro study), is that there is no discernable differentiation of market channels (the latter defined by end-users) at the farm level, and no differentiation by farm-size. The hypothesis is that there is no exclusion from modern market channels because the latter do not extend or manifest themselves beyond the level of the wholesale market, except to a very small degree.

3.2 India

Policy drivers

The dairy sector in India is the largest in the world. It has grown four-fold since 1950, and three-fold since 1970. There have been a series of policy changes that have had important effects on the restructuring of the burgeoning Indian dairy sector.

a) In 1970 the first major policy/programme change came into effect with Operation Flood (which lasted until 1996). This programme

   i. promoted dairy co-operatives and invested in chilling stations with processing plants;

   ii. banned or restricted imports and most exports;

   iii. licensed the processing sector (thus requiring government approval of each processing unit);

   iv. ensured remunerative prices to farmers;

   v. set up consumer outlets for the milk from the co-ops and government dairies.

   This programme has been credited with major restructuring of the sector which has moved from a purely informal sector with no organization to being partially organized in co-operatives; from being a free-market entity on the production and processing side to being strictly controlled; and for introducing technological upgrading in milk production and processing (for the milk that passes through the co-ops).

b) The next major policy reform took place in 1991 with the New Economic Policy, a structural adjustment programme freeing exchange rates, liberalizing trade and domestic markets, and liberalizing FDI in processing and retail. It also 'de-licensed' the dairy sector so private sector firms could set up at will.

c) In 1992, there was an almost immediate reaction from the private sector (including the multinational sector) against the competition with the co-ops that the full de-licensing implied. The de-licensing was subsequently reversed (until 2002). The Milk and Milk Products Order was established, reintroducing licensing and the 'milk-shed', which required licensed co-ops and private sector companies to source milk from designated areas in their vicinity. This meant in practice that private sector companies could not reach out into areas where co-ops were already sourcing and compete for their own operations.

d) In 1994 India joined the GATT and in 1995 the WTO, which required the liberalization of the processing sector and the reduction of trade barriers.

e) In 2002 there was an important amendment to the MMPO, which essentially re-launched the full liberalization of the dairy market that had briefly started in 1991, and had then been constrained for a decade by the MMPO. The amendment removed all restrictions to private sector involvement in processing, de-licensed the sector, and eliminated the milk-shed regulation, but strengthened milk safety and quality regulations and standards in the formal sector. These measures meant that the private sector and co-ops could now compete for the same farmers.

The meso study thus notes a suite of policy changes which might theoretically lead to the restructuring of all segments of the dairy value chain. The findings from the Indian meso study suggest that the policies, as well as the private sector responses to them, did indeed have some restructuring effect on the dairy sector. These are discussed segment by segment below.

Retail restructuring

There has been only very minor restructuring in the dairy retail sector. However, this seems poised to accelerate, particularly in the spread of modern retail practices.

a) Operation Flood, accompanied by the creation of the National Dairy Development Board, created milk retail points in some big cities, selling milk and dairy products directly. This constituted public sector retail of milk, and was tantamount to a type of restructuring relative to the purely informal milk retailing prevalent before. While this was an important initiative in some cities, it must be borne in mind that only the co-operatives and government-run dairies were involved, and even by 2005 constituted just 8 per cent of total milk output in India. Furthermore, only a small share of the dairy output of co-ops in India is marketed to large urban centres where the direct retail points were set up. In terms of overall milk retail in India, this constitutes a tiny share, perhaps only slightly more than the emerging supermarkets.

b) Another very recent phenomenon has led to very minor restructuring of the retail sector for dairy products. Supermarkets started in 1996 and while they have increased more quickly since 2000, their spread is still relatively constrained by prevailing FDI restrictions. At present the modern retail sector is roughly 1 per cent of the total food retail in India, which is probably the same for dairy products *per se.*

Processing restructuring

There has been some restructuring of dairy processing, but at most only 16 per cent of the dairy sector overall. However, this seems poised to accelerate and to continue to change in quality, as the private sector increases more quickly than the co-operatives in the small formal sector. It is also possible that the small formal sector will continue to rise and gain a greater share than its current 16 per cent.

a) In 1969, all processing in India took place in the informal sector in villages. The milk was either sold fresh, processed by farmers themselves, or taken by wholesalers to informal sector processors in rural areas. From there the milk was taken by wholesalers or brokers to towns and sold to consumers and informal retailers.

b) In 1970 Operation Flood began the restructuring of the processing sector, adding a co-operatives-based processing unit and chilling station. Between 1970 and 2006 the processing sector grew (from 0 to 6.6 per cent in 1995 and then to 8 per cent of the overall milk volume by 2005).

c) It must be borne in mind that even by 2005 milk marketing outside the village was still only 52 per cent of the total milk output in India (hence 48 per cent was consumed within the village of production). Of that 52 per cent, 44 per cent was marketed fresh, and 56 per cent was marketed as processed. Furthermore, in 2005 of that 52 per cent, 30 per cent was marketed by co-ops and private sector firms, and the other 70 per cent was marketed via the informal system as before 1970. This means that 84 per cent of milk in India is still marketed as it was in 1969, and still untouched by any restructuring. Now we turn to the restructuring noted by the meso study.

d) In 1991, and then modified by licensing in 1992, private sector milk processing was allowed. This was strengthened with the further liberalization of FDI when India entered GATT in 1994 and WTO in 1995. By 2005 the private sector processed eight per cent of milk in India. This is carried out by large companies like Nestle as well as medium-sized private companies.

e) The meso study detected a rapid rise in the private sector compared the co-op and government sectors of processing between the mid 1990s and the mid 2000s, presumably driven by the policy changes noted above, and the private sector response:

   i. The private sector processing capacity was 24 million kg (litres) a day in 1996, jumping to 46 million in 2006, a 97 per cent climb.

   ii. By contrast, the co-op sector had a capacity of 24 million kg a day in 1996, but only rose 27 per cent to 36.6 million per day in 2006.

   iii. The government sector (government milk schemes, government plants, mother dairies) more than doubled their capacity from 7.3 million kilos per day in 1996 to 15.4 million per day in 2006. Thus, restructuring moved the private sector from equal first place with co-ops in 1996, to the clear front-runner in the (small) formal sector by 2006.

f) Interface point: the meso study's focus groups suggest two trends are occurring for the following reasons:

i. The co-ops and private sector are gaining ground over the informal sector (in particular the wholesalers, but also the village market) because the formal sector provides more assistance of various types to the farmers (veterinary, equipment, credit, artificial insemination, feed) and quality premiums in pricing. The wholesalers also offer credit, but of a more limited nature, and represent to the farmers a risky market channel (non-payment, etc.). However, the wholesalers are flexible, so that in part of a season the wholesalers can compete by offering higher prices to draw away milk promised to co-ops or companies;

ii. The private sector is gaining ground over the co-ops apparently because they offer farmers greater levels and more types of the assistance and premiums noted above. This competition was not present while the milk-shed policy was in place, but when it was dismantled in 2002, the competition between the private sector and the co-ops intensified for farmers and the market share.

g) The co-operatives are competing by taking a leaf out of the book of the private companies, by consolidating branding (such as the formation of the Amul brand among a group of co-ops), and by increasing the average processing unit size by some 20 per cent in the move towards gaining economies of scale.

Wholesale restructuring

a) Traditionally farmers sold directly to consumers (in villages) or via milk wholesalers/brokers.

b) Over time the share sold directly to consumers has dropped (to just 24 per cent by 2005, the rest via processors and informal sector wholesalers and brokers).

c) Over time the share of milk sold via milk wholesalers and brokers has dropped, while the share sold by farmers direct to processors has increased. Processors then sell on to larger processors, who in turn sell to modern retailers.

d) As well as being displaced by direct selling amongst processors, wholesalers and brokers have been sidelined by consolidation in the wholesale sector, including price pressure from retailers, the decline in the overall share by small retailers which in turn undermines their traditional clientele base, and competition with imports.

e) The informal sector is still very important in the rural areas, in the provinces, and to small retailers (who still hold half of the overall market).

Farm-sector restructuring

a) 80 per cent of the dairy farms in India are small with just two or three cows, but in some states such as Punjab, Haryana and Gujarat amongst others, herds are being scaled up;

b) The study zones are all dominated by small farms and by the informal sector. However, in Gujarat co-ops dominate the formal sector; in Punjab and Haryana there is a mix of co-ops and private companies in the formal sector, with the private sector gaining ground over the co-ops since 2002, a trend seen at the national level. The local meso study emphasizes the point made above that the co-ops and private sector have various incentives (relative to the informal sector) to win over farmers as their suppliers. Examples are given from several companies like Nestle. The trend is expected to continue.

c) The local meso study did not, however, point to any differentiation in terms of the type of farmer which might be drawn to modern marketing channels (private sector and co-op processors). The emerging hypothesis for the micro study is that the location of the farmer may matter in terms of access to these alternatives to the informal sector, but farm characteristics *per se* will not play a substantial role.

3.3 Indonesia

Policy drivers

a) In the 1970s and 1980s there was policy support for the food processing sector as part of a general policy of industrializing import substitution. This also included liberalized FDI in the processing sector, which brought in a number of global multinationals (Unilever, Coca-Cola, Heinz, Nestle, and others).

b) From 1969 to 1997 FDI in retail was prohibited in Indonesia, except for a few loopholes (similar to those in India today), including franchise, and in logistical relation to domestic chains.

c) Retail FDI was liberalized in 1998, as part of the package of reforms instituted after the Asian financial crisis.

d) Finally, there were various policies aimed at restructuring the wholesale sector. As in many other countries this involved large investment in public wholesale markets particularly in the 1970s and 1980s, to transform the sector from scattered small truck-markets to a wholesale market system. In the 1990s and 2000s, it involved the limited upgrading of such markets, and the building of new 'rural points' such as agribusiness terminals and collection points, which were widely considered as failures. There were several provincial and municipal initiatives, such as auction markets.

Thus, in general, the policy path pursued appears to favour restructuring in the retail and processing sectors, with importance also being placed on wholesale markets. This is confirmed in general by the meso study findings, which point towards some new directions in restructuring.

Retail restructuring

a) Typical of many developing countries, Indonesia witnessed a gradual development of supermarket chains beginning in the 1970s and 1980s. These were focused in the rich consumer segments of the capital city, and dominated by domestic capital. This narrow market had a solid base by the time of the Asian financial crisis in 1997/8, growing as a result of domestic investment, rapid urbanization (the proportion of urban land grew from 22 per cent in 1980 to 42 per cent by 2000), and an increase in *per capita* income.

b) After the retail FDI liberalization in 1998, the supermarket sector grew very rapidly and saw the arrival of several global multinationals (such as Carrefour), and a regional multinational (Dairy Farm, from Hong Kong). Large local chains like Matahari responded with intensified domestic investment, as did convenience store chains like Indomart. The sector is consolidating, though still has a way to go. There are supermarket chains growing 'off Java' and in provinces outside Jakarta on Java. For example, in the mid 1990s, nearly all of Indonesia's supermarkets were in Jakarta, but by 2005 Jakarta had only 60 per cent of the total, and most of that spread had taken place in the past three to five years. Furthermore, small supermarkets and convenience stores are starting to spread from the A-B customers to the C-D customers and to small towns on Java.

c) The upshot is that modern retail had about 30 per cent of the overall food market and about 10 per cent of the fresh produce market by 2005/6, with both segments growing rapidly. (Note that in all countries including the US and Western Europe, penetration of the modern retail sector into fresh produce lags behind that of processed goods. For example, supermarkets have penetrated some 52 per cent of the potato chip market, fast food outlets have most of the French fry market, but supermarkets have only 10 per cent of the fresh potato market. Moreover, as in other developing countries, the fresh produce section of supermarkets was tiny in the late 1990s (with only around 1 percent of the total sales), but had risen rapidly to become a major section of the store by 2007 (increasing to between 8 and 10 per cent of total sales, thereby approaching the Mexican or the US share of 10 to 15 per cent).

d) Fast food chains also spread very rapidly, of significance to the potato story below.

e) Interface point: the leading supermarket chains procure some of their tomatoes (one of the study crops) from the emerging specialized/dedicated wholesalers (like Bimandiri or Putri Segar) who have field operations and sets of preferred suppliers; and the rest they buy from the traditional wholesale markets. This segment of procurement is growing as supermarkets seek to avoid the congestion and transaction costs of what they perceive as the highly inadequate wholesale markets. However, while supermarkets rely on the specialized wholesalers for tomatoes which are highly perishable and very variable in quality, they purchase potatoes, a basic bulk commodity which has low perishability and is more uniform in quality, from the wholesale market. Some regional supermarket chains have direct sourcing arrangements with local potato farms/companies, as noted below.

Processing restructuring

a) There was rapid restructuring of the processed foods sector in the 1980s and into the 1990s, with FDI liberalization, rapid consolidation, and a steady rise in the scale of processing plants scale and in capital:output ratio. The processed food output grew steadily until the financial crisis, it then dipped and grew again, reaching a level of 50 per cent higher than before the crisis by 2005. There had been a steady and strong annual 'shake-out' of small companies after the shock, so the overall effect was increased consolidation.

b) Between 1985 and 2005 there was a rapid increase in the involvement of multinationals. Half the top ten food companies in Indonesia are now foreign, and include Nestle, Unilever, Coca-cola, Heinz (one of the leading tomato processors in the world), and Frito Lay (one of the world's leading potato processors and owned by Pepsico, a 40 billion dollar snacks company). A joint venture in 1990 between Frito Lay and Indofoods led to the creation of Indofood Frito Lay Makmur (see www.indofoods.co.id) to produce processed potato products. Indofoods is the largest food manufacturer/processor in Indonesia.

c) The tomato processing industry is not examined in depth in the meso study. Because of a dearth of the processing variety of tomato in Indonesia, the tomato processing industry has effectively separated from local production and tends to rely on imported ingredients. Moreover, Indonesians tend to consume fresh tomatoes, the key ingredient in 'sambal', a piquant sauce like salsa.

   The rapidly growing fast food industry has resulted in a steep growth in demand for French fries, which are made from a particular variety (Atlantic) of potato, different from the fresh potato variety (granola). However, because of a lack of sufficient seed locally, and a ban on imports of the certified seed in 2004 due to disease, Indonesia has had to rely on imports of granola to meet the growing demand for potato chips from supermarkets and convenience stores. The growth in imports grew rapidly between 2000 and 2005.

d) Interface point: because the Atlantic variety of potato was not available in the wholesale market, the major processors sourced from individual large farm companies such as Hikmah (see below) and set up contract farming schemes with many groups of small farmers (some of which are in the areas in the study zone in west Java). This began in the mid 1990s and has recently accelerated. Farmers growing for the processed market favoured these contract schemes because there is no spot market for the processing variety.

Wholesale restructuring

As mentioned in the section on policy, there was substantial government investment in the late 1970s and 1980s in building wholesale markets. It appears from the meso study that there was a 'rise of wholesalers' in the 1990s, and then in the 2000's, a 'nascent restructuring of the now-large wholesale sector'. The points are as follows.

a) In the mid 1990s the intermediate sector in the study zone (West Java) consisted almost entirely of small brokers who bought direct from tomato and potato farmers and then sold on to the larger wholesalers in the wholesale markets of the cities.

b) By the mid 2000s the larger wholesalers in the study zone predominated over the smaller brokers who operated mainly in the hinterland areas. A small proportion of the tomato market (around 10-15 per cent), though hardly any of the potato market, is handled by the emergent specialized/dedicated wholesalers who sell on to supermarkets, fast food firms, and other HORECA, and who have preferred suppliers and quality selection. While the brokers bought ungraded goods in the 1990s, today's wholesalers buy graded produce, particularly in the case of tomatoes. Potato processors have a growing but still very limited presence in the field with contract schemes involving farmer groups who receive seed and credit.

c) Note that in the study zone there are two sub-zones, one more commercial, densely farmed, and closer to the cities, and the other based in the more hinterland areas. The majority of the wholesale development and restructuring is taking place in the more dynamic sub-zone, while the hinterland zone still resembles west Java in the mid-1990s.

Farm-sector restructuring

a) While tomatoes have been a part of the diet longer than potatoes, which are a very recent introduction, neither are traditional foods in Indonesia. However, the production of both has increased very sharply over the past 25 years, rising from 200,000 tons to a million tons by 2005.

b) West Java has seen a rise and fall in potato production, from a concentration in a few highland areas, to the production of seed potatoes, and a shift away to cheaper land areas on other islands for the production of bulk potatoes. By contrast, tomato production has risen rapidly and has displaced potatoes in many areas, especially in the lowlands.

c) The vast majority of potato and tomato farms are very small, about 1 ha in the hinterland, and 2 ha in the commercial areas. Because of substantial renting, this is operated land and covers a greater area than owned land, which is typically less than 1 ha.

d) However, the above figures disguise an important trend of land consolidation in west Java. The meso study on tomatoes shows that there is a rapid rise of middle-class farmers with 5-10 ha (having bought rice land from small farmers).

e) In sharp contradiction to the conventional image of the sector, the meso study on potatoes points out the presence of large potato companies such as Hikmah, which operates 200 hectares, of which 60 ha are owned, 80 are rented, and 60 are in usufruct from government tea land. Hikmah has several such operations in Indonesia. It also has contract farms locally in west Java. Formerly a partner of Indofood in supplying processing potatoes, it has recently turned to the higher value production of seeds (since the import ban in 2004) to consolidation of its own potato processing operations, and to setting up contract schemes on other islands with cheaper land and labour. Some of Hikmah's fresh potatoes are sold directly to regional supermarket chains, but most go to processing companies or the wholesale markets via large wholesalers.

f) However, the sample chosen for the micro study is of small farmers and deliberately excludes large potato producers. The same is true of the tomato study. However, the meso study on tomatoes reaches a different conclusion from the potato study. While the tomato study has found a differentiation in modern market participation between high and low commercial zones, and between farmers with different levels of non-land assets and possibly land assets within the small farmer category, no such differentiation has been found amongst potato farmers and market segments. Indeed the latter will be quite small given the almost complete dominance of traditional wholesale structures found in the meso study for potatoes outside the processing segment link. The degree and determinants of inclusion or exclusion of small farmers in modern market channels is examined empirically in the tomato and potato micro studies, summarized in the companion synthesis report focused on Module 3 of Component 1.

3.4 Mexico

Policy drivers

While there has been a series of policy changes that have had a general effect on food industry restructuring in Mexico, there have been no policies that deal specifically with the strawberry sector. The meso report did not examine the links between the general policies and the specific changes in the strawberry sector *per se*. But such policies, including those outlined below, have influenced overall trends such as the rise of supermarkets in Mexico.

a) Various market liberalization policy changes (NAFTA, 1994; liberalization of retail FDI as part of NAFTA);

b) Various policies support small farmers in ways that are not specific to restructuring at the farm level. However, by supporting the small-farm sector, one could argue that they might have slowed down the consolidation of small farms (Alliance for Farmers, Procampo). Overall, these programmes have supported small farmers through subsidies for equipment such as sprayers; improvements in infrastructure like packing sheds and irrigation; variable inputs such as fertilizer; and through access to financial and other services.

c) Policies that encouraged trade include ASERCA, an export promotion mechanism in the Ministry of Agriculture. This does not have a great influence on the export of strawberries *per se*, an area dominated by US firms operating in Mexico, with minor participation of large domestic wholesalers.

d) There is also a Value Chain Promotion System in Mexico, with branches for specific products, such as strawberries, implemented at both national and provincial levels. This is mainly a conduit for general sectoral support for small farmers, such as training and credit.

The meso study did not highlight policies with specific impacts on the restructuring of the strawberry sector in terms of processing, wholesaling or farming. However, general policies in the mid 1990s such as the relaxation of trade and constraints on retail FDI had major impacts on overall market structure, thus affecting strawberries, as noted below.

Retail restructuring

a) Food retail in urban areas underwent rapid restructuring between 1990 and the 2000s. By 2006 supermarkets and hypermarkets had secured 52 per cent of overall food retail (up from about 5 per cent in 1990), and the supermarket share of fresh produce had risen from around 0 per cent in 1990 to 25 per cent in 2006. As recently as 2000 supermarkets in Mexico sold very little fresh produce, so the increase has mostly taken place between 2000 and the present.

b) The meso study undertook a rough estimate of the marketing composition of strawberry output in Mexico in 2004, by interviewing several large wholesalers in the Mexico City wholesale market. Their estimates were as follows:

   i. The wholesale market in Mexico City marketed 40,000 tons of domestic strawberries, and 4,500 tons of US strawberries;

ii. The second-stage manufacturers (ice cream manufacturers, baked good firms, etc.) marketed 45,000 tons of strawberries;

iii. 80,000 tons are exported (of which 43,000 are fresh and 37,000 tons processed);

iv. supermarkets in Central Mexico (sourcing mainly from the Mexico City wholesale market) retail 3,000 tons of domestic and 5,000 tons of US strawberries;

v. wholesale markets in the north of Mexico market 10,000 tons of strawberries (in turn retailed by traditional retailers and supermarkets in the north).

In the fresh market in Central Mexico, the supermarket share (as hypothesized by the large wholesalers) is roughly 18 per cent. This figure may be an underestimate because the wholesalers lack information on the direct purchases of supermarkets from large companies such as Driscoll's which operate in the field. While supermarkets still have a minority share of the overall market, meso study interviewees agreed that this is growing rapidly.

c) Interface point: upstream segment interviewees noted that modern retailers require higher quality than the prevailing traditional retailers, and have restructured their procurement system accordingly.

d) According to both supermarket and wholesaler interviewees, modern retailers have made a significant shift in sourcing over the past five to seven years. Whereas, in 2000 they sourced 100 per cent from the wholesale market, by 2005 they were purchasing strawberries from three different sources:

i. directly from exporter/growers like Driscolls;

ii. directly from large wholesalers in the wholesale market;

iii. from specialized/dedicated wholesalers inside the wholesale markets, who in turn source from large wholesalers, selecting for the aesthetic quality of the strawberries.

e) A key finding of the meso study was the high degree of integration between the US and the Mexican strawberry markets. This is partly driven by the retail strategy of the US supermarket chains since the 1990s, whereby strawberries are retailed throughout the year; before that time, strawberries were a sharply seasonal product on supermarket shelves. This change in strategy has necessitated the import of Mexican strawberries off-season into the US. The Mexican supermarket chains have recently pursued the same strategy. Companies like Driscoll's have operations in both countries, facilitating market integration.

Processing restructuring

a) Based on estimates from interviews of large wholesalers in the wholesale market of Mexico City, about 45 per cent of output is processed. This amounts to 82,000 tons (45,000 tons in domestic second-stage processing and 37,000 tons for export). The meso study notes that there is little foreign capital (apart from one large processor) invested in the processing sector.

b) The meso study notes that there is significant stratification of the processing sector, with first-stage, large-scale, modern processors, intermediate level processors, and small local processors. The larger, lead firms are the most dynamic firms in the sector. They have entered contract agreements with, and are developing novel product presentations for, specific large-scale firms in the food manufacturing sector. However, the restructuring medium-sized firms are trying to escape from the commodity trap with strategies involving new products and market innovations, and while they have had little success to date, they continue to make investments to that end. There are also non-restructuring, medium-sized firms that continue to focus on commodity products with a declining value. These tend to be the main buyers for the majority of small farmers.

c) While there are no data tracking the restructuring process over time, the meso study respondents were unanimous in stating that, in terms of consolidation and product differentiation, restructuring has been taking place over the past decade in the processing sector, and is set to continue. As a result, the sector is already fairly concentrated. In 2005/06 in Michoacan, the top three firms (each with annual processing volumes three times those of the medium firms) had 57 per cent of the processed volume in the state; the modern medium firms had 1 per cent and the commodity medium firms had 28 per cent.

d) Interface point: the large processors tend to be the main ones to export, and to sell directly to large, second-stage processors like ice cream companies.

e) Interface point: the larger processors, specifically those that supply the US fresh market, tend to buy directly from medium farmers with technical capacity; the intermediate, modern firms source directly from small farmers as well as wholesalers; and commodity firms mix sourcing from farmers as well as wholesalers and brokers. The inclusion of medium farmers with technical capacity and good agricultural practices as suppliers for large processors is a recent development that displaces small farmers from this segment of the market.

f) Interface point: first-stage processors tend to sell to second-stage processors (food manufacturers) in preferred supplier relationships. The first-stage processors produce ingredients, so do not sell directly to retailers.

Wholesale restructuring

Supermarkets (like traditional retailers) buy the majority of their fresh strawberries from the wholesale market, and their processed strawberries mainly from large food manufacturers (a segment which is very concentrated in Mexico). While some of the largest supermarkets like Wal-mart have attempted to buy direct, this has been unsuccessful because working with the medium, high-technology farmers, requires using the contract farming scheme of Driscoll's, and thus buying from Driscoll's. Because of the high transaction costs incurred by working with small farmers, the large chains are forced to use the large wholesalers and the few contract farming schemes as their sources.

a) Exceptions to this are some of the largest chains, such as Wal-mart, who are sourcing a proportion of their strawberries directly from Driscolls. For the past few years this Californian firm has had a contract scheme with technically equipped, medium-sized farmers in Michoacan.

b) While the wholesale market is made up of around 80 strawberry wholesalers, the segment is actually very concentrated, with two giant wholesalers controlling a large share, and also exporting. The supermarkets buy direct from these and other wholesalers, often via an emergent group of specialized/dedicated wholesalers who buy, sort, and pack to the supermarkets' specifications.

c) Hence, the two key restructuring trends at the wholesale market level are consolidation (with several large wholesalers becoming increasingly dominant), and differentiation and specialization (with the emergence of the specialized/dedicated wholesalers, the supermarket agents in the wholesale market).

d) From the study zone, roughly 70 per cent of the strawberries go to the domestic market (fresh and processed). At the time of the study, hardly any went directly to supermarkets. According to the meso study, strawberries from farms go either to a wide range of intermediaries (brokers, wholesalers) and on to retailers or processors, or directly to the processors and then on for export or retail. The wholesalers are divided into large, 'modern', formal wholesalers who mainly sell out of the Mexico City wholesale market, or to medium and small wholesalers or brokers who sell via the local (Michoacan) wholesale market. From there the strawberries go to the large wholesale market in Mexico City, to local retail, and to processors.

To conclude, the current state of the strawberry wholesale market is 'semi-restructured' if one views the situation in the context of a continuum which goes from strictly traditional (with local small brokers fully dominating the market at the rural level and a spot traditional wholesale market fully dominating at the urban level), to fully restructured (with farmers selling directly to large processors, supermarkets and exporters, and via dominant specialized/dedicated wholesalers).

The rural market is now a mix of small brokers and modern large-scale wholesalers, the various strata of processors, and in the Michoacan case, a large foreign company managing a contract scheme and exporting the strawberries or selling them to supermarkets in Mexico. Compared with two decades ago when the strawberry market looked most like the 'traditional' system mentioned above, the process of restructuring is underway. However, it is not yet clear whether restructuring will proceed further, and if so, what form it will take. There have been recent attempts by companies to move restructuring forward. For example, last year Wal-mart attempted to buy direct from the farmers. However, buying from the small farmers proved very costly, and because it is not possible to buy from the medium-sized farmers contracted by Driscoll's, the direct-purchase programme failed. It is most likely is that the wholesale sector will gradually restructure further, with consolidation and further emergence of specialized/dedicated wholesalers, as hypothesized by the meso study.

Farm-sector restructuring

a) Strawberries were introduced into Mexico in the twentieth century and their production took off in the 1940s as an export product, managed by US multinationals. Strawberry production gradually spread beyond the export to the domestic market and into consumption patterns, mainly through the incorporation of the processed ingredient into baked goods and ice cream, and to a lesser extent via fresh strawberry consumption as a niche fruit in the diet. The production, area and number of producers peaked in the late 1960s and has declined since. Because of international competition and decreasing prices in the domestic market it is still a declining farm sector in Mexico.

b) The farm sector is becoming more concentrated, with the rise of medium-sized farms with advanced technology working in contract schemes.

c) Furthermore, there is significant differentiation in farm technology. This was highlighted in the meso study which gathered information on both the medium-sized farms in the contract farming scheme (observing that they are using capital-intensive technology) and the small farms outside the contract scheme. In contrast, the micro study sampled only from the small-farm group, as the medium farms were prohibited under contract from sharing information with third parties.

d) However, even within the small-farm segment, the meso study showed that there is significant technology differentiation and change over time, with the adoption of new techniques (such as plastic mulching) to ensure higher quality. The emerging hypothesis is that there is significant technological and non-land asset differentiation between small farmers selling to the modern channel, and those selling to the traditional channel. This was in turn tested in the micro study using small farm survey data.

3.5 Poland

Policy drivers

There has been a series of policy changes, some of which have promoted restructuring, and some that have constrained restructuring, albeit to a lesser extent.

a) Since 1989 there has been a general process of privatization and liberalization of domestic markets, trade, and FDI, that began with the end of the communist period.

b) From 1992 to 2004 there was a policy of import protection for dairy produce; with EU Accession in 2004, imports and exports were liberalized and trade between Poland and other EU countries increased rapidly.

c) From 1989 to 2004, there was a continuation of state intervention in the dairy sector, in order to balance the market (for butter and milk powder).

d) In 1994, a 'preferential credit system' was put in place which promoted investment for the rapid restructuring of dairy processing in the 1990s.

e) In 2002 in anticipation of EU Accession in 2004, public funds were injected to fund processors' direct payment price premiums to farmers for extra quality in milk, which was successful.

f) In July 2002 a special direct payment for 'extra' quality milk production was implemented as an additional support for dairy producers. This measure aimed to encourage dairy farmers to improve milk quality in the pre-accession period, and was funded by the Agricultural Market Agency.

g) In 2004, with Poland's accession to the EU, policy changes were implemented, based on EU policies then applied in Poland. These included:

   i. market support (a continuation of the policy in c) above with the aim of balancing the market;

   ii. direct payment support to farmers for quality upgrading;

   iii. 'milk quotas' (in the form of quotas for farmers) aimed at controlling supply to curtail excess demand on the support budget. Farmers and processors can buy and sell quotas (in limited ways), but if they over-sell beyond quota they are taxed;

   iv. EU standards of milk quality, safety, and veterinary practices are imposed for milk and dairy products sold on the domestic and also the export market;

   v. land rental and purchase are limited by regulations to avoid buy-out of agricultural land.

h) By December 2006 (at the end of the meso study), the EU imposed milk safety and veterinary certification on all farmers (expected to be difficult for small farmers).

The meso study thus hypothesized that the suite of policy changes would induce restructuring in all segments of the dairy value chain. The findings from the Poland meso study suggest that the policies, as well as the private sector responses to them, had that effect. These are discussed segment by segment below.

Retail restructuring

a) Food retail in urban areas has restructured quickly from 1990 to the 2000s. By 2002 supermarkets and hypermarkets had 44 per cent of the share of processed food retail in urban areas (Incoma Research); modern retail had 40-50 per cent of dairy in 2004 (depending on the type of dairy product) (ACNielsen); this was a radical change from 1990 when dairy products were sold only via small shops; the share is lower in rural villages.[2]

[2] Note that according to processor interviewees in the study zones, the shares of modern retail in processing are lower than these figures suggest; the study team notes the discrepancy with national studies, believing it to be based on the lower sales of the smaller processors compared with those of the larger processors.

b) The meso study interviewees (from all segments) noted that modern retailers have shifted over time to higher quality and more SKUs (diversification) of dairy products.

c) Interface point: upstream segment interviewees noted that modern retailers require greater volume, consistency and quality from suppliers than extant traditional retailers.

d) Interface point: both supermarket and processor interviewees noted that modern retailers prefer to source from larger processors, and *vice versa*;

e) While continued penetration of the dairy market into modern retail is expected, it is thought to be constrained by relatively low rural incomes, and by province-specific rules (for example, one of the study provinces blocks hypermarket development).

Wholesale restructuring

a) Traditionally farmers sold to consumers directly (in villages), or via wholesalers, who sold on to processors at collection points. From there the products were sold to other wholesalers, and eventually to small retailers.

b) Over time, the share of dairy produce sold direct to consumers has dropped (circa 2 per cent in 2005), and the majority is sold via processors.

c) The share of milk sold via collection points has also dropped, while the share sold from farmers direct to processors has increased via processors collecting from farms, and via large processors selling direct to modern retailers, as noted above.

d) As well as being displaced by direct sales among farmers, processors, and retailers as noted above, wholesalers are also being displaced by consolidation in the wholesale sector, retail price pressures, the decline in share of small retailers, (thus undermining their traditional clientele base), and from competition with imports.

e) While the overall share of wholesale declines, the wholesale sector itself is consolidating as some remaining wholesalers have increased in size in order to exploit economies of scale of truck fleets and to be more attractive to larger suppliers and clients.

f) Wholesale still tends to be very important in the rural areas, in the provinces, and to small retailers (who have half the overall market).

g) Interface point: wholesalers noted that they prefer to work with larger processors as this reduces their transaction costs.

Processing restructuring

a) The meso study identified restructuring in the processing segment as the leading motor of overall restructuring.

b) Consolidation has been rapid: in 1996, 10 per cent of the processors bought 15 per cent of the milk produced; by 2004 that figure had risen to 67 per cent. The top processors are a mix of co-ops and corporate firms, so there has not yet been a corporate takeover.

c) Consolidation of the processor segment was driven by two sets of policies in two waves:

   i. Since the investment facility in 1994 (see above) the first wave of consolidation began as large processors emerged (from the co-op and corporate ranks of processors).

   ii. A second wave occurred with the 2002 EU support for restructuring and then as a result of the policies related to the 2004 EU accession noted above.

d) The second driver was price pressure from consolidating retailers.

e) The meso study interviewees noted that c) and d) interacted: the profit rate first rose and then fell after the EU accession, putting pressure on processors to consolidate in order to meet the profit squeeze with economies of scale.

f) Interface point: the meso interviewees from the larger processors noted that they all prefer to sell directly to modern retailers: about 30-60 per cent of their sales are to modern retail, and 35-50 per cent via wholesalers to small retailers.

g) In contrast, the small processors sell almost exclusively to wholesalers, who then sell on to small retailers in their provinces; a few small processors scale up instead to specialize and export.

h) Interface point: the large processors indicated that they have yearly contracts with the modern retail chains. They noted they while they do not secure higher prices, they have lower transaction costs and more stability with the large chains than they do selling to wholesalers.

i) The meso study points to two constraints to further processing restructuring:

   i. 80 per cent of processors are co-ops; the meso study showed that co-ops tend to have constraints in decision-making (compared to individual companies) including those involved in restructuring, such as investment in scale;

   ii. The milk quotas are not fully transferable which slows down companies building their shares.

j) Interface point: processors are moving away from sourcing via the traditional market channel (using collection points for many farms to deliver to a point) to sourcing via the modern market channel (in which the processor collects direct from farms). The survey of processors showed that the share sourced via the traditional channel was 46 per cent of milk in 2003, and only 28 per cent in 2005.

k) Processors have begun to pay premiums for higher quality and volume from farmers, driving investments at farm-level in cooling tanks, increased herd size and the adoption of contracts by farmers.

Farm-sector restructuring

a) Between 1990 and 2005 there was a decline (by 6 per cent) in the overall number of farms. The farm sector has also consolidated: farms with more than ten cows amounted to 15 per cent of all farms selling milk to the market in 1996, and 50 per cent in 2005.

b) The share of the smallest farms with one to nine cows in total dropped from 86 per cent to 64 per cent between 2000 and 2005 (the most intense consolidation period for the industry as a whole), and this resulted in a big gain in market share for farms with 30 cows or more.

c) Interface point: as noted above, processors noted that they have been shifting from sourcing milk from village collection points to sourcing directly from farms. This was also noted by the farm and PRA respondents in the local-meso survey.

d) Interface point: the processors claimed that milk is tested for bacteria and other traits when it is sourced direct from farms.

e) Farmer focus groups stated that that processors pay premiums, provide extension services and credit to those farmers with cooling tanks, those with larger herds, those who sell a large volume and those who are willing to work to contract.

f) Farmers have an incentive to improve feed systems in order to increase their output and gain the price premiums.

g) Farmers were assigned quotas based on their production in a base reference year. They therefore had an incentive to increase herd sizes before the reference year, in order to ensure higher quotas would be set, after which they can buy or rent an addition to their quota (the extra expense is balanced by larger profits and higher productivity).

h) An obstacle to further consolidation in the regions surveyed is the existence (as stated by the focus groups) of constraints to lease and buy more land because of the CAP (EU Common Agricultural Policy) payment system which is based on the area of the farm; farmers are reluctant to sell or lease their land and thus lose CAP payments, or forego capital gains should land prices rise further.

i) Another key constraint to farm-sector consolidation is milk-quota transferability, which is not 'full and easy'.

j) Despite these constraints, consolidation has progressed rapidly in recent years, and it is hypothesized that there are important threshold investments to be made at farm level in order to facilitate the industry's entry into modern channels. This will be tested in the micro study.

3.6 South Africa: tomatoes

Policy drivers

a) In 1994 South Africa moved to democracy in the shift to post-Apartheid. This took place simultaneously with a trend towards urbanization, rising incomes, and an acceleration in the growth of imports and exports. There was also major investment in urban infrastructure and transport. These factors all played a part in accelerating the existing trend of modern retail diffusion in cities and into former homelands. The emergence and growth of a post-Apartheid, black middle-class further contributed to this trend.

b) In the late 1990s, and with the various land redistribution acts, a market-led land reform began. This has had only a very minor impact in terms of land redistribution between the commercial and small-farmer segments (only 4 per cent of land redistributed), so it cannot be said to have de-consolidated the highly polarized farm sector.

c) In the late 2000s there have been several new programmes including Agricultural Black Empowerment (AgriBEE), various province-specific development assistance programmes for small, emergent black farmers, and a microfinance initiative in agriculture. However, the meso study noted that these have been just initial steps and have only been partially implemented so far. They have had a limited effect in facilitating the entry of small-scale black farmers into restructured, downstream segments of the food system.

3.6.2. Retail restructuring

South Africa provides an example of advanced retail restructuring.

a) Like other countries in the world, the traditional retail in South Africa consists of small shops, hawkers, and public markets/wet markets.

b) The traditional retail sector began a process of restructuring between the 1950s and the 1980s. Supermarkets gradually developed in the cities between the 1940s/1950s to the 1980s among the more affluent white population. In the 1990s, propelled by the changes noted above, the supermarket sector took off and added to it were hypermarkets, convenience store chains, and cash & carries (wholesale stores selling to HORECA and small retailers), but still mainly in the cities outside the former homelands. In the early 2000s, driven by the rapid emergence of franchising, supermarkets spread into the former homelands among the black population.

c) The spread of modern retail has been especially rapid in the past ten years. The number of supermarkets grew from 2175 in 1999 to 3000 in 2006, and PlanetRetail predicts that the number will rise to 3600 in 2011. From 1999 to 2006 the number of stores increased by 38 per cent, and the sales by 30 per cent a year. (Note that stores have increased faster than sales; this is because smaller format supermarkets have spread rapidly into rural towns in the former homelands, a new trend.)

d) Modern retail was estimated to have approximately 60 per cent of food retail by 2006. It is probable that the modern share will continue to increase. Compare the 30 per cent/year sales increase with the average economic growth rate of 4 per cent/year since 1999, and it is clear that modern retail continues to displace traditional retail.

e) A key difference between South Africa and many other developing countries is that retail restructuring is driven only by domestic capital – not by FDI (despite there being no restriction on retail FDI). This is partly because of the presence of strong domestic chains early on in the launch of modern retail, and their willingness to invest rapidly to defend their turf. The meso study suggests that South Africa's relative remoteness might also have contributed to this.

f) A key difference between South Africa and many other developing countries is that retail restructuring is driven only by domestic capital. However, the four leading South African supermarket chains, with Shoprite as the forerunner, are vigorously investing in other African countries, particularly (but not only) eastern and southern Africa and recently also in west Africa (Ghana and Nigeria).

g) The modern retail sector is extremely concentrated; the C4 ratio is 95 per cent.

h) Interface point: traditionally (in the 1970s/1980s), supermarkets sourced exclusively from the urban wholesale markets (of which there are now 17, see below). Gradually, through the 1990s and the 2000s, the big supermarket chains (especially the top four with 95 per cent of modern retail sales) shifted away from the wholesale markets toward using their own distribution centers (DCs) and sourcing directly from their preferred suppliers. By 2005, for example, only 11 per cent of the volume in one of the top two wholesale markets (in Pretoria), went to supermarket chains. The leading chains source the majority of produce from large, commercial farmers who deliver to their DCs, a minority is sourced from wholesale markets, and a very small share is sourced directly from small producers. Examples from the main two chains, Shoprite and Pick n' Pay (PnP) are given below.

   Shoprite, the leading retailer, relied on wholesale markets for 70 per cent of its produce in 1992. In the same year Freshmark, a specialized/dedicated wholesaler (now wholly owned by Shoprite/Checkers, started to form 'preferred supplier' relationships with large commercial farmers (from whom it sources the majority of its produce), as well as some large wholesalers and some medium and smaller farmers. By 2006 it had 700 such preferred suppliers (a few for each main product), from whom it sourced 90 per cent of its produce, with the remaining 10 per cent being sourced from the wholesale markets. A decade ago the share from preferred suppliers was just 50 per cent. Freshmark follows Shoprite into other African countries, still sourcing much of its produce from South Africa, although that is changing as a result of domestic pressures and import duties in the host countries, and transport costs from South Africa. Freshmark has private quality standards, and since 2007 requires HACCP from its suppliers as well. The meso study respondents noted that this will be a challenge for the remaining smaller preferred suppliers, as well as suppliers from the wholesale market who do not have such certification.

Pick n' Pay, the second leading retailer, does not have its own specialized/dedicated branch, but follows a similar pattern, in which its 450 preferred suppliers (from whom it sources 97 per cent of its produce) deliver to its DCs. Ten years ago the share from preferred suppliers was just 50 per cent.

It should be noted that the shift to using preferred suppliers, away from the wholesale markets, was facilitated in South Africa by the polarized farm-sector structure, discussed below.

Processing restructuring

a) Food processing began restructuring in the 1970s and by the 1980s was already very concentrated. By 1985 it had plateaued with 10 per cent of firms controlling 84 per cent of sales, a share which changed little in the next decade: in 1996 it had risen to just 85 per cent.

b) In general the processing sector is dominated by South African capital, although some notable MNCs have been operating for many decades, such as Nestle and Heinz.

c) Large tomato processors were part of the meso study (as the micro study focuses on tomatoes); the latter source from large and small farmers, mostly via contract farming, and are very minor participants in wholesale markets (by 2005, only 1 per cent of the fresh produce from the front-ranked wholesale market was sold to processors). The tomato processing sector is very concentrated. These large firms play the market, sourcing tomatoes from China when the rand was stronger than the Yuan.

Wholesale restructuring

a) In the 1970s and 1980s, the public sector in South Africa made substantial investments in the construction of wholesale markets in cities. By 2007 there were 17 wholesale markets selling fresh produce. This development from small truck-markets to public wholesale markets marks the beginning of the restructuring process and the de-fragmentation that that implies.

b) A report cited by the meso study found that the share of produce sold in wholesale markets was 64 per cent in 1993 and had dropped to 53 per cent in 2004, a trend the meso study respondents expected to continue. The main reason for this decline over the past 15 years (as suggested by the meso study respondents) is the substantial move by the supermarkets away from wholesale markets to source directly from preferred suppliers, coupled with the rise of the supermarkets' share in produce retail.

c) Furthermore, the wholesale market segment is consolidating: while the share of the smaller wholesale markets is decreasing, that of the markets at the top end (e.g., Pretoria and Johannesburg) is increasing. The C4 rose from 70 per cent in 1999 to 75 per cent in 2005. The meso study did not explore whether such consolidation is also taking place between wholesalers in a given wholesale market.

d) In 2004, 57 per cent of tomatoes (one of the top two basic vegetable commodities) moved through wholesale markets, and the other 43 per cent went mainly from suppliers direct to supermarket DCs.

e) Wholesale markets source from small and large farmers, and produce is delivered either directly by farmers themselves, or via the usual system of field brokers.

Farm-sector restructuring

Like the processing sector, the farm sector restructured decades ago, becoming very polarized by the 1990s and 2000s when the restructuring of the retail sector was most rapid.

a) The commercial farm segment, composed almost exclusively of white-owned, large farms, has 2.5 per cent of the farms, and 60 per cent of the production. The subsistence/small farm segment, is composed of a mix of black-owned and white-owned, small farms that participate in markets, and emerging black-owned, small, semi-subsistence farms mainly in the former homelands.

b) The commercial farm segment is consolidating: from 1992 to 2002, while the output rose, the number of units declined by 21 per cent.

c) Interface point: interviews with the leading supermarket chains noted that the majority of produce is sourced from preferred suppliers in the commercial farm sector. Only a small share comes from commercializing small farmers, and with only a few exceptions among retailers, very little from the 'emerging farmers'. This seems likely to change somewhat as legislation in 2008 requires agricultural companies to identify how much they procure from the small-scale or black farmers.

d) The local-meso study focused on provinces in the north of South Africa, geographically distant from the urban centre of the economy, and in areas where there are many smallholders. The study focused on tomatoes.

e) A crucial point that emerged in the national-meso study when interviewing supermarkets, and was echoed at the local-meso level, is that the major supermarket chains source the great majority of their tomatoes from large commercial farmers (not in the study provinces), and turn to the small farmer areas only to meet gaps in supply from their main suppliers. For example, as of February 2008, the composition of Freshmark tomato procurement was as follows: direct from small farmers 5 per cent; from commercial farmers 85 per cent; and from wholesale markets 10 per cent.

   The composition of Pick n' Pay tomato procurement is as follows: direct from small farmers 5 per cent; from commercial farmers 70 per cent; and from wholesale markets 25 per cent. Note that this sets the context for the micro study, which focuses on small-scale farms, and addresses the more specific question of what kind of small farmers are involved in the supermarket or processing markets, rather than the overall sourcing pattern of the supermarket.

f) The local-meso study found that small farmers sell directly to two different categories of the modern segments: the large processors (Giant Foods and Tiger Brands), who buy in contract schemes from small farmers, and small, local supermarket chains and cash & carries.

g) The local-meso study respondents suggest that there are two clearly differentiated categories of small tomato farmers potentially selling into the processing and local supermarket chain markets. The first is the commercializing small farmer, with drip irrigation, packing sheds and greenhouses, using hybrid seeds, and with high yields. This is the kind of small farmer, they posit (and this hypothesis will be tested in the micro study), who sells to supermarket chains and processors. The second is the asset-poor, small farmer, with no sheds or greenhouses, using flood irrigation, traditional seeds, hiring a tractor, with a sixth of the yields of the commercializing small farmers. This second type of poor, small farmer sells tomatoes only to the local brokers and to the hawkers.

3.7 Turkey: tomatoes

Policy drivers

Turkish policy has provided firm and steady support for retail restructuring, while strongly constraining wholesale restructuring. At the producer level, technological upgrading (recently including a farm advisory service) and the organization of farmers were the main aims of the policies. The key points of the policies are as follows.

a) In the 1950s the government launched two supermarket chains: Migros, a joint venture with invited FDI by the Swiss co-operative retailer Migros (later acquired by Koç Holdings, a Turkish conglomerate, in the 1970s); Gima, a state-owned department store including food (later acquired by Carrefour in 2005).

b) In the 1970s municipalities in large cities established supermarket chains such as Tansaş in Izmir, later acquired by Migros in 2005.

c) In the 1980s there was a general policy process of structural adjustment.

d) In early 1990s retail FDI was liberalized, followed by a large flow of FDI from Carrefour, Metro, Tesco, and others.

e) In the mid-1980s the government supported the spread of commercial centres, through investment subsidies, tax exoneration and tax credits. This was to reduce the share of informal retail (evading tax) and increase the share of formal retail (paying tax). In the 1990s incentive policies of this kind extended to, and then became dominated by hypermarkets.

f) In 1995, a wholesale market law was instituted that mandated retailers (and other intermediaries) to buy produce from the wholesale markets and from licensed wholesalers (operating on commissions). Exceptions were those producers selling very small amounts; those buying from farmer co-ops; processing companies; exporters; and recently, organic producers. While in theory this gave impetus to the formation of co-ops, the latter remained very limited. Essentially, supermarkets were legally constrained from buying direct from production areas. As the available space in the wholesale markets was reserved for a set number of licensed wholesalers, there was little encouragement for direct sales by co-ops in the wholesale markets.

g) The wholesale market law was partially amended in 2007. While the act still allows co-ops to sell in wholesale markets, it now stipulates that 10 per cent of the stands must be reserved for them, thus forcing space for co-ops. The act allows municipalities to either rent or sell stands in wholesale markets, to set up new wholesale markets, and to issue permits to intermediaries other than the existing licensed wholesalers. However, supermarkets still have to buy via the wholesale markets (paying a fee), even if they arrange the transaction directly with the farmers.

h) Several food safety laws were instituted in the 1990s and 2000s, mainly affecting processed food and fresh produce for export. The meso study noted that fresh produce for the domestic market was nearly untouched by these laws (through a lack of implementation). Moreover, GATT/WTO accession, exports to the EU and European retailers, and recently Russian Federation demands for EUREPGAP and safety documents, meant that safety standards had to be monitored and implemented for Turkish fresh produce exported to Europe and the Russian Federation.

i) Finally, in the mid-1990s the government introduced subsidies and credits for greenhouses (which spread quickly, though in recent years only for controlled production and organic farming), drip irrigation, and application of good agricultural practices (the latter in the very small export segment). Agricultural co-ops (including 'agricultural producer unions') were encouraged by law in 2004 as channels of prioritized support, but until now the response to this has been very slow.

Retail restructuring

a) Turkey has the typical traditional retail sector of any country in the world (the usual small shops, wet markets, and so on).

b) From the 1950s to the 1980s modern retail spread in Turkey at a slow/moderate pace, led by domestic capital, and municipality and state-owned chains, and it was confined to the large cities.

c) The liberalization of FDI in the 1990s, accompanied by rapid *per capita* income growth, urbanization, demographic changes and economic crises, the supermarket sector took off., extending to hypermarkets, discount chains, mini/small supermarkets and convenience stores. Growth was extremely rapid. For example, from 1996 to 2006:

   i. hypermarkets increased from 37 to 164;

   ii. mini/small supermarkets increased from 1279 to 4239;

   iii. medium supermarkets increased from 464 to 1567;

   iv. Big supermarkets increased from 200 to 504.

By 2005, the share of modern retail in all food was 35 per cent (and is likely to be higher now given the rapid growth).

d) By contrast, the number of small shops decreased from 176,432 to 138,106 in the same ten year period.

e) However, as in other countries, the share of fresh produce sold via modern retail outlets started later and is growing less quickly than that of food products overall (at 15-20 per cent). However, the share is now increasing rapidly.

f) Over the decade from 1995-2005, supermarkets spread from big cities to medium/small cities, where they became dominant, while the small shops and wet markets have continued to dominate in small towns, rural villages, and poorer areas of the country.

g) The rapid spread of supermarkets was fuelled by a large amount of foreign and domestic investment; by tax rules encouraging location to cities; and by socio-economic factors: Turkey went from 29 per cent urban in 1970 to 67 per cent urban in 2007; In the same period its income *per capita* expanded 1000 per cent; women entered the workforce in massive numbers; and education rose at an extremely fast pace.

h) There has also been rapid multinationalization of the modern retail sector from early/mid 1990s to the present. By 2007 three of the top four chains were global firms. By February 2008 all four top firms were foreign-owned (the top one, Migros, has just been purchased by a UK equity firm).

i) Consolidation was at first gradual but is now rapid. The concentration of global retailers by the mid-2000s drove a sudden spurt of consolidation between 2005 and 2007, and this is expected to continue.

j) Interface point: there is a great contrast, however, between the 'textbook' restructuring on the retail side, and the relative lack of restructuring in the procurement systems of supermarket chains. This can be explained by two interconnecting factors: the wholesale law forces supermarkets to buy fresh vegetables and fruits via wholesale markets, except when they can buy from co-ops; but there are very few of these. This may be a mutually reinforcing cycle.

k) It is often assumed that 'traditional retail' is static. However, the large public markets like the bazaars (in which wet markets are located) are restructuring and upgrading, focusing on offering higher quality and service to compete with the supermarkets, and to reduce the gap in terms of market infrastructure and hygiene. This means wholesalers and farmers will increasingly face two types of retail (modern and modernizing traditional) both demanding quality and reduced transaction costs.

Processing restructuring

a) 20 per cent of the overall volume of tomatoes are processed; 15 per cent are losses; 62 per cent are fresh sales; and a mere 4 per cent are exported.

b) The tomato processing sector is already restructured and very concentrated. Much is exported.

c) Interface point: the companies source about one third of their tomatoes through contract farming arrangements with farmers near the plants.

Wholesale restructuring

a) As expected from the discussion of the wholesale policies above, the meso study found that retailers, modern and traditional, rely almost exclusively on the wholesale market

b) The number of licensed wholesalers has hardly changed, and they are mostly concentrated in the wholesale markets. There is little room for merchants other than the licensed wholesalers in the wholesale markets themselves, except for the small amount now mandated by law (and it remains to be seen to what extent the law is implemented). But the field-based brokers play a significant role (shared in particular with the licensed wholesalers who also undertake direct field sourcing) in moving the product from the field to the stalls of the licensed wholesalers in the wholesale markets.

c) Yet several alternative marketing channels are emerging, but are only in the very initial phases:

   i. Specialized/dedicated wholesalers (mainly from the ranks of the regular wholesalers) who buy mostly in the wholesale markets, but also from co-ops.

   ii. Parallel market intermediaries (not using wholesale markets),as found by the local-meso study;

   iii. Initial development of co-ops marketing directly.

d) At the same time, the established wholesale segment is transforming: licensed wholesalers in the big cities are backward-integrating by investing in packing plants in rural areas; are horizontally-integrating by setting up stands in production area wholesale markets; are specializing into dedicated relationships with supermarkets, and are setting up networks of agents to extend credit and collect produce from farmers (thus possibly undercutting direct-sale relationships and impeding the formation of co-ops).

e) Interface point: the licensed wholesalers meet a hitherto unmet need of farmers, for credit. This makes it difficult for farmers to step away from selling mainly to these wholesalers or their broker/agents, in favour of supermarkets or co-ops.

f) Interface point: however, as we show below, farms are so small, and co-ops so few, that even when supermarkets and exporters are in a position to buy direct from farmers (as with the new law), they still rely on the wholesale markets. It is expected that the regulations introduced in 2005 and 2007 may encourage the development of co-ops (producer organizations), and thus more direct selling.

Farm-sector restructuring

a) There has been very little consolidation of tomato farms, which have remained very small (around 3 ha of field tomatoes or 0.2-0.3 ha of greenhouses which were around 0.1 ha during the late-1980s and beginning of the 1990s). Larger farmers sell to the small export market.

b) However significant technological upgrading is now taking place, with the spread of greenhouses (now at 20 per cent of the total output from a very low level at the start of the 1990s), hybrid seed, drip irrigation, and so on. This is encouraged by credit, other support policies, and market opportunities.

c) There is a small amount of contracting, given that 20 per cent of tomatoes go to processors, and processors obtain about 30 per cent of their tomatoes via contract farming.

d) Very few farmers are in marketing co-ops. However, the meso study showed some marked success in cases where marketing co-ops sell directly to supermarkets and receive higher prices for quality differentiation, avoiding the margin of the licensed wholesalers. These cases may multiply in the future.

e) Given that supermarkets buy almost exclusively from licensed wholesalers, that farmers are almost all very small, that there are few contracts, and that there are very few co-ops, it is expected that the micro study will find that neither farm size nor non-land assets influences participation in modern marketing channels.

3.8 Zambia

Policy drivers

a) The beef parastatal, The Cold Storage Board of Zambia (founded in the 1970s), set about buying stockyards, collected cattle from traditional farmers, and provided veterinary, dipping, spraying and inspection at the slaughter point. The government also established 'co-operative unions' in each province as conduits for public services to farmers. The meso report notes, however, that this system collapsed before 1991 (when it was privatized), due to 'abuses'.

b) Following the privatization of the parastatal system the beef market was liberalized (1991-'93), and foreign investment was encouraged via the Investment Act of 1991. State slaughterhouses were sold or leased to private companies through the 1990s, and private companies made substantial new investments (see below). The concomitant public services noted above (like government collection from farmers of cattle, and publicly provided veterinary services) were also discontinued with the end of the CSBZ and the state slaughterhouses. With this shift, farmers had to pay for services, transport their own cattle or sell them to wholesalers at the farm gate.

c) In the 1990s there was a set of major shocks to the sector, in the form of massive outbreaks of livestock disease, which severely reduced mobility. Increasingly, cattle needed to be first slaughtered and the carcasses transported, rather than follow the former practice of transporting live cattle in trucks. This meant that those wholesalers who had refrigerator trucks became an increasingly important conduit of meat to the cities.

d) In 2003 a government/donor programme (The Livestock Development Trust) was established to help the small farmers who, the study posits, were deprived of the services formerly supplied by the parastatal. The study notes that this programme has yet to make significant progress.

e) The meso study emphasizes that after the liberalization of 1991-93, no 'market rules' or other market regulations have been established, except for (incompletely implemented) sanitary standards for animals arriving at the slaughterhouse level.

The meso study notes a suite of policy changes that should theoretically lead to restructuring in all segments of the livestock value chain. The study also looked at the poultry sector, but no separate policy changes that focused on poultry *per se* were highlighted. The restructuring of both beef and poultry value chains is examined below.

Retail restructuring

a) There has been only minor restructuring of beef and chicken retail at the national level. The country is still predominantly rural and the traditional retail system is still dominant in both rural and urban areas.

b) However, since the mid 1990s, supermarkets and fast-food chains have begun to spread rapidly in Zambian cities and some towns. The meso study provided no estimate of the share of supermarkets in meat retail. Furthermore, the share of supermarkets in overall retail cannot be inferred from the share of commercial producers in the overall production of beef, because main suppliers to supermarkets (such as ZAMBEEF) do not source purely from commercial cattle producers. However, while the report notes that the number of supermarkets has been growing rapidly in urban areas since the mid/late 1990s, the number of supermarket stores is still relatively small; for example, the leading chain had only some 20 stores in 2006 (this was a South African chain until 2006 when it was purchased by a Zambian company). The meso study suggests that as food safety and quality improves, the share of meat sold via supermarkets will increase.

Processing restructuring

The restructuring of processing is at the forefront of the meso study.

a) A preface: the points about restructuring below concern meat which is marketed beyond the farm/village gate. The meso report does not offer an estimate of the share of overall meat produced that is consumed in the village, or of its evolution over time. As urban beef consumption grows, albeit slowly, it is assumed that the share of meat marketed outside the village is increasing over time. Moreover, one can assume that the share of marketed meat is far higher in the commercial sector than in the traditional sector, and far higher for beef than for small ruminants.

b) The first stage of restructuring was during the parastatal phase in the 1970s and 1980s, when informal traditional slaughtering (the first stage of processing, rendering animals into carcasses) was taken over mainly by the state.

c) The second stage was initiated by the privatization/liberalization of 1991-1993, when the state slaughterhouses (first stage processing) were sold or leased. There are no official data on the changes in ownership or numbers of slaughterhouses from 1980 (the last census of slaughterhouses) to the present; thus, estimates about the process of restructuring have been formed from focus groups, informant interviews, and the case study information showing substantial private-sector investment and forward integration, as noted below.

d) The first and clearest evidence of rapid restructuring in processing is the spectacular rise in the 1990s/2000s of very large (relative to the urban market in Zambia), vertically integrated or semi-integrated, beef and chicken companies.

e) The market leader (in beef, chicken, milk, hides, and shoes) is ZAMBEEF. Its total sales, which include the above listed products plus crops, is US$50 million a year. While not strictly comparable, it is instructive to compare that figure with another figure provided by the meso study: the total value of the slaughter off-take of beef in Zambia is estimated at about US$25 million per year. This in itself suggests that the beef processing sector in Zambia is becoming quite concentrated. The story of ZAMBEEF parallels the restructuring process in Zambian beef as a whole. The Zambezi Ranching and Cropping (ZRC) was a huge private ranch dating from the 1970s. It had its own animals, and animals it bought from other ranchers, slaughtered by ZAMBEEF. When investment rules were liberalized in the 1990s, it forward-integrated by buying 50 per cent of ZAMBEEF in 1996 and then the rest by 2005. It had also been diversifying into the products noted above. It backward-integrated by producing its own feed on one of the largest farms in Africa; it then forward-integrated into retailing (opening a chain of 82 beef retail stores and a fast-food chain of seven fried chicken restaurants called ZAMCHICKS), by producing hides and then shoes, and went into second-stage processing (such as cuts of steak).In the 2000s it became in the preferred supplier of the Shoprite supermarket chain in Zambia and Nigeria.

f) The meso study notes that following liberalization, the 1990s and 2000s have seen the rise of both middle-sized processing companies (that have bought, leased or invested in green-field and in slaughterhouses), and second- and third-stage processing plants that compete with the giant ZAMBEEF, and supply to newly emergent supermarket chains, specialty stores, the tourism sector, and also traditional retailers. Some of the investment impetus for the rise of the medium processing companies has resulted from the commercial ranchers' forward-integrating or joint-venturing into slaughtering (as in the case of ZRC above. This leads to a reduction in transaction costs and control over the hygiene, quality and value-added aspects of the first-stage processing and it creates a lucrative addition to the second and third stage processing, which then positions the supplier to sell to supermarkets, or to forward-integrate into their own retailing.

g) A final aspect of vertical integration is crucial. We noted above that outbreaks of disease greatly increased the importance of having the capacity to slaughter in the production area and then transport the carcasses to cities in chilled trucks. The meso study noted a dearth of this transport to lease; the larger integrated companies tend to have more access to this transport via their own trucks, which gives them an advantage.

h) Finally, the meso study provided examples of the observed decline of informal sector and publicly leased slaughterhouses, due to inadequate facilities and competition from the new companies, noted above.

i) In addition, the chicken study noted the rapid rise in the past decade of fully or semi-integrated chick-broiler or chick-egg operations that have risen to dominate the urban, formal market for broilers and eggs. Again, there are several dominant companies involved: either chick companies that have forward-integrated or contracted out, or processing companies (like ZAMCHICK, part of ZAMBEEF), which have backward-integrated.

The local-meso study examined several cases of farmers selling directly to slaughterhouses, some owned by ZAMBEEF, some government-owned and leased to smaller companies. It reported mixed results. For example, one of the two slaughterhouses of ZAMBEEF paid price differentials for quality, provided food assistance (green offal) to farmers as they waited for payment, and provided veterinary assistance at the point of sale at the slaughterhouse to meet sanitary standards. (Note that this veterinary assistance at the slaughterhouse is common practice in private company slaughterhouses because they need to meet sanitary standards). In the case of the other ZAMBEEF slaughterhouse, there were no price premiums, which is generally the case in farmer-to-processor relations. Most of the slaughterhouses run by the private companies provide no veterinary assistance at the slaughter site, no extension (advice to the farmers at their production sites), no credit, or any other services.

Wholesale restructuring

a) During the parastatal period, farmers sold directly to the parastatal slaughterhouses, which collected the animals from the farms. In the period from 1991 to 1993 there was a substantial rise in the number of wholesalers. From focus groups it has been shown that, because the great majority of farmers do not have their own trucks, some 70 to 95 per cent of the cattle are sold by farmers to traders who take them to the slaughterhouses to sell. (Note that the other 5-30 per cent of the farmers sell directly to the slaughterhouses, as noted above under the section on processing). The wholesalers negotiate a price and take the animal, occasionally providing some short-term credit to the farmer. Grades and standards are not applied; animal quality differentiation is not rewarded with price differentiation, and because animals from various farms commingle, traceability is not possible; no extension or other services are provided by the wholesaler.

b) The meso study noted that the new, large processors are essentially in competition with the wholesalers. This competition appears to have driven initiatives (e.g., those used by ZAMBEEF) aimed at drawing farmers away from wholesalers, by using quality-premium payments, and food assistance while the farmers wait one or two weeks for payment.

c) Interface point applicable here and in the section on processing restructuring, the meso study found no evidence to suggest that there is a difference between types of small farmers who sell to wholesalers and those who sell directly to slaughterhouses. However, having a means of transporting the cattle or being close enough to walk them in, seems to play a role. However, the meso study showed that commercial farmers tend to sell direct to the large processing companies. The government provides veterinary services by inspecting cattle before and after slaughter.

Farm-sector restructuring

a) The Zambian beef and chicken farm sectors are strongly polarized, with large modern production units at one end (of chickens near Lusaka, and of cattle in ranches in various provinces) and tiny production units for chicken and cattle scattered over the country, at the other end. The latter (the traditional production sector) dominates in terms of numbers, with 83 per cent of the cattle and a similar share of chickens. There has been no process of concentration in the livestock production sector, with large cattle ranchers buying or leasing smallholder land. However, yields and yield-growth rates vary significantly between the strata, but the volume of production is concentrating over time.

b) However, production-level restructuring is apparent from the increase in the number of feedlots, prompted by the poor condition of livestock from the traditional sector. Some commercial producers have taken advantage of the possible improvement in quality and profits by fattening smallholder cattle before processing.

c) It appears from the meso study that the large-scale commercial producers, often vertically-integrated into processing and even retailing, are the key participants on the supply side of the downstream restructuring in processing, which in turn is the main supplier of the restructuring retail and fast food sectors (such as in ZAMBEEF's exclusive contract with Shoprite).

The meso study hypothesizes that small farmer participation depends on access to transportation and location.

4 Comparison of country studies and hypotheses for the micro study

A comparison of the meso study syntheses is set out as follows:

4.1 Preface: a shared traditional system base and history
As a preface to the comparisons of the country studies which focus on the liberalization period of restructuring, we underscore several points concerning the traditional system (usually before 1950s/1960s in most countries).

4.2 Preface: a shared 'public sector intervention stage' which initiated restructuring/modernization
A look at public sector induced modernization (between the 1950s and the 1980s in most countries), periods that provide the recent history backdrop for the 1990s and 2000s.

4.3 Policies in the liberalization period
Focusing on the liberalization period (1990s/2000s) we compare the country studies with respect to policy and the restructuring of the retail, processing, wholesaling and farm-sector segments.

4.1 Preface: a shared traditional system base and history

The study countries form a shared baseline of similar traditional food systems.

a) All the study countries had a similar traditional system of food retail in the past, consisting of small shops, wet markets and street hawkers. This traditional system was also seen in Western Europe and North America five to eight decades ago. This was the case for foods in general, and also for the study product categories of fresh produce and dairy, which were traditionally bought in traditional retail outlets or direct from local farmers in all the study countries.

b) Moreover, the traditional processing sector was also small scale and local (and certainly in the cases of the product categories), except for few industrial or export products like sugar.

c) In all the study countries wholesale markets historically took the form of local truck-markets in the rural areas or on the fringes of cities, usually set up by intermediaries or by the local village or town.

d) Finally, while this is not a point about the food 'system' *per se*, in all the countries, at least for the study products, small farms dominated on the production side. Large farms existed in many of the countries, but usually in enclave sectors focused on exports.

4.2 Preface: a shared 'public sector intervention stage' which initiated restructuring/modernization

Most, if not all the study countries had a stage of public sector intervention that transformed traditional food systems. This stage occurred approximately between the 1940s/1950s and the 1970s/1980s. This period can be considered a stage of 'modernization initiation' in the food system (although there is some variation over countries). It is important to note that this public sector intervention moved the food systems of the countries from 'traditional' to 'modernizing', and the 'liberalization' period that followed pushed the process ahead, but along the same path initiated by government in the 1970s/1980s or before. There are several points to note:

a) The extent of public intervention in the food system varied across countries, but was present in all in the pricing and marketing of basic staples, to some extent.

b) Many of the governments of the study countries intervened directly and early in the initial modernization of retail by investing in the setting up of retail chains: in China, food stores and then later the first supermarkets; in India, the fair price shops and subsequently, 'Mother Dairy' stores; in Turkey and Zambia, state supermarket chains; in Mexico supermarket chains for government employees; in Poland collectives and/or co-op stores and food stores. Perhaps Indonesia and South Africa are the only exceptions. In general, governments did this to control the prices of staples and insulate their retail distribution from perceived speculative wholesalers. Note that these retail interventions were hardly ever in fresh produce, and seldom in dairy.

c) All the study countries invested, to a greater or lesser extent, in public wholesale markets. (This has also occurred in Western Europe and North America in recent history.) For some countries, such as Indonesia and Mexico, this occurred in the 1970s, and for others more recently, such as China which made the majority of such investments in the 1990s. In general, governments did this explicitly to modernize the wholesale system which had traditionally been fragmented and local, in order to increase efficiency in the system, making food cheaper and more accessible in the cities, and to increase the consumption of fresh produce. The restructuring of the wholesale system has generally taken place in the public sector period, which in most countries preceded 'liberalization' (as in Mexico), and in some, coincided with its beginning, such as in China.

d) In most of the study countries, there was public sector intervention in processing during this period, but mainly in efforts to promote food security or self-reliance in staples, as in parastatal grain enterprises, and in the dairy industry in India (such as Operation Flood and NDDB). This did not occur in the processing of fresh produce.

   Moreover, even during the 'public sector intervention' period, there were initiatives by governments to invite foreign companies to enter the processing sector, and selective liberalization of FDI laws to allow this entry. (We are not writing here about the more traditional and long-standing involvement of foreign firms in primary plantations for export). This selective liberalization took place in the context of 'import substitution industrialization'. It included dairy (in some countries but not in India), meat, and produce processing and was aimed at helping in diversification. However, it did not affect domestic control over the processing of basic staples.

To sum up, on the eve of the liberalization period (which started in the 1980s or 1990s), there had already been public-sector induced restructuring, particularly of the wholesale sector, the staples processing sector, and the staples retailing sector. There had already been considerable domestic private investment, and some selected foreign investment in the non-staples processing sectors. The latter contributed to the very early consolidation of processing (in the 1980s), further accelerated in the liberalization period, in the countries which began restructuring early on (Mexico, South Africa, Indonesia, Turkey).

4.3 Policies in the liberalization period

All the study countries had a set of policies introduced during the market liberalization period between the 1980s and the 2000s, (but on average in the 1990s). This set of policies was in general shared over the countries, with a few variations:

a) **General policies**: there was a general set of policies linked to market liberalization, such as trade liberalization, privatization of parastatals, and the elimination of price controls and limits on internal movement of goods.

b) **Retail and processing sector policy**

   i. There was full or partial privatization of the public sector retail and processing segments. The exception in the case studies is the NDDB for dairy in India, the only one that is still fully in the public sector. The privatization involved full or partial sale of the public sector retail firms to domestic, as well as to foreign firms (as in Turkey's Migros and Gima, Zambia's government retail chain, and China's Lianhua).

ii. In several countries there were domestic policies that encouraged private investment in supermarkets (foreign or domestic capital), such as in Turkey, Mexico and China. The policies were often motivated by the desire to formalize (and thus collect taxes from) the retail sector, and to modernize commerce. In most countries policies concerning hygiene and the location of wet markets tended to limit wet market expansion, thus indirectly encouraging supermarkets.

iii. However, the most important policy that hastened the development of supermarkets and the deepening of consolidation in processing was the liberalization of retail FDI. In some cases wholesale FDI was also liberalized but to little effect. In contrast, in the late 1980s or early 1990s there was a wave (new or renewed) of processing investments in, for example, the Polish and Indian dairy sector, and into the Indonesian potato sector by Frito-Lay. Moreover, there was a massive wave of retail FDI into all the study countries, except India where retail FDI is still not permitted on the whole. However, the retail boom in India was fuelled by domestic capital. This was also the case in South Africa even though retail FDI is permitted. In some cases the liberalization of retail FDI was progressively ratcheted up over a period of a decade, as in China.

c) **Wholesale sector policies**

i. In most countries, wholesale markets (i.e., the actual premises, but not the overall wholesale sector) remained mainly in the public sector, with some private wholesale markets emerging in certain countries. Public sector policy of the 1970s and 1980s led to the building of public wholesale markets, with a move in the 1990s to extend them beyond the main cities and to upgrade them. However, this policy extended to the premises only and did not affect the wholesale sector as a whole. Even in the 'public sector period' the wholesale sector was *de facto* liberalized, as wholesalers could enter or leave the market merely by paying the fee. This continued into the liberalization period of the 1990s.

ii. There were some interesting exceptions, with a process of 'de-liberalization' in certain countries. In the 1990s India and Turkey both instituted state control (via licensing) of the wholesalers in the public wholesale markets, with the aim of avoiding chaos and speculation of the wholesale sector that might endanger urban food security and farmer incomes. However, under pressure from farmers, unlicensed wholesalers, and retailers, these laws have been amended in both countries during the 2000s, but generally remain in effect.

d) **Farm sector policies**

i. There were mixed results over the country studies regarding the liberalization of the land market, and thus the ability of downstream restructuring to induce upstream consolidation in farmland distribution. In some of the countries, including South Africa, Mexico, Indonesia, Turkey and Zambia, the land markets are unregulated and farmers can buy, rent, or sell their land without constraint. In others, including India, China and Poland there are partial controls on the land market. In India, these controls vary across states; in China, rental and long-term transfer are allowed but not buying and selling; and in Poland, there are partial constraints on land sale, particularly to foreigners.

ii. Another regulation that controls the extent to which downstream restructuring affects the farm sector was found in the case of Poland, which has sales quotas (from the EU accession in 2004) assigned to producers and based on the level of production of a given farm before restructuring. A surcharge is levied if sales exceed the quota. Farmers can trade quotas but this trade is limited. The extent of the limitation of quota trading or transfer impedes consolidation of the dairy-farm sector, in the same way as limitation on land sale or purchase.

iii. There is a third type of government policy, widely shared across the study countries, that controls the extent to which downstream restructuring affects the farm sector, that is, support of small farmers by governments and donors. The meso studies reported that the level and quality of this support varies considerably between countries.

- In some countries, the very process of structural adjustment (the broader umbrella under which market liberalization is inserted) had removed or reduced the public sector support for small farmers that had existed in the 'public intervention period'.

- In some countries (such as Indonesia), the meso study noted that the remaining public sector services are still geared to traditional market requirements, and while services like extension are present, they are focused on rice, and are ill-equipped for the needs of the restructuring, quality-demanding, horticultural markets.

- In some cases (such as Mexico), there is still significant support, but there are questions as to its effectiveness.

- However, in some cases such as China, there is a rapid development of private seed and input distributors who are helping the farmers to make technological improvements.

- In a few cases, the new modern channel clients are assisting farmers with various services, for example, large dairy processors are sourcing from small farmers in Poland and India; there are contract farming schemes for medium farmers in Mexico; ZAMBEEF in Zambia is buying from cattle producers at slaughterhouse points; and specialized/dedicated wholesalers and potato processors are providing technical assistance to small producers in Indonesia.

4.4 Retail restructuring – widely shared retail restructuring, narrowly distributed procurement restructuring

a) The set of retail restructuring policies, combined with a keen private sector investment response from both domestic and foreign capital, in a socio-economic context of rapidly rising urbanization and incomes (in most of the countries), has led to the rapid rise of modern food retailing. The slow development of the sector in the countries that had supermarkets before 1990 (all but Poland, China, and India) did not predict the rapid escalation in all the countries during the 1990s and/or the 2000s.

b) Once this escalation had begun, the growth in sales of supermarkets was rapid in all the countries – typically three to five times faster than the growth rate of *per capita* GDP. Traditional retail was also growing, but more slowly, sometimes at or slower than *per capita* GDP. The upshot is that the share of modern retail in overall food retailing rose from a very small share in all the countries in the early 1990s, to significant levels by 2006 on average. One can classify the study countries into categories in terms of the extent of retail restructuring in overall food retail by 2006. Note that these are estimates for the whole country, while the shares in the largest cities are typically higher:

   i. Advanced: supermarket share in overall food retail 40-60 per cent (South Africa, Mexico, Poland);

   ii. Intermediate: 11-39 per cent: (Turkey, Indonesia, China);

iii. Initial: 1-10 per cent (India, Zambia).

Given that the retail sectors have comparable rates of restructuring (with China and India currently being the fastest); the following can be posited to explain the different levels or categories of restructuring.

i. While 40 per cent of the population of China and 35 per cent of the population of India are based in urban areas, the urban population is 50-80 per cent in Mexico, Poland, Turkey, South Africa, and Indonesia.

ii. Retail FDI was fully liberalized more recently in China, Indonesia, and India than the other study countries.

iii. Average income tends to follow the categories; however, over time supermarkets tend to penetrate lower income segments as well as middle income segments in urban areas, so this appears to be less pertinent than the starting dates of full liberalization and the urban shares in population.

c) Note that the shares above are for supermarket penetration in overall food retail. However, this differs according to product category.

i. The overall share of supermarkets in food retail approximately mirrors its penetration into dairy retail (for example, supermarkets have 40 per cent of dairy in Poland, and 45 per cent of overall food retail; in India, it is about 1 per cent for each). The similarity between the penetration of dairy retail and overall food retail is an internationally typical result (including in North America and Western Europe).

ii. However, the penetration by supermarkets of fresh produce retail significantly lags behind that of the overall penetration; for example, in Mexico supermarkets have 55 per cent of overall food versus 25 per cent of fresh produce; in Indonesia, 30 per cent of overall food versus 10 per cent of fresh produce; in Turkey, 35 per cent versus 20 per cent. However, this trend is not region- or country-specific. It also occurred in the US during its eight decades of supermarket development. For the first four decades supermarkets did not sell fresh produce, as typically families would buy fresh produce on a daily basis from street hawkers, small shops, and wet markets. Moreover, as recently as the late 1990s supermarkets sold little or no fresh produce in a number of the study countries. In the past five to six years, though, the share of produce sold in supermarkets has risen very quickly as in Mexico. Overall, the studies show (and thus coincide with prior research on this) that retail restructuring has proceeded furthest in processed foods and least far in fresh produce, although this is gradually catching up.

d) The findings concerning procurement system restructuring show uneven restructuring over products and over countries.

i. Supermarket chains in Poland and India are mainly buying direct from large processors. In the case of Poland these are private companies (domestic and multinational) and in the case of India, a mix of private companies (such as Nestle) and government/co-operative firms, such as Amul and Mother Dairy. Relatively little is sourced from wholesalers who collect from processors. This contrasts with traditional retailers who buy from small processors, and wholesalers who buy from small processors, in both countries.

ii. Supermarket chains in Zambia source their beef from large first- and second-stage processors such as ZAMBEEF and medium/large third-stage processors. This contrasts with traditional retailers who buy from small first- and second-stage processors and from wholesalers.

iii. Supermarket chains in all the study countries source the majority of the specific products under scrutiny of the wholesale markets, with the exception of South African leading chains, which source tomatoes mainly from large commercial farmers via preferred supplier relationships. The following specific findings refine this general point:

- In Indonesia and Mexico, supermarkets also source a minority of their produce directly from large production/contract farming companies, such as Driscoll's for strawberries in Mexico, and Hikmah's for potatoes in Indonesia. While this includes only a minority of fresh produce, supermarkets source the majority of other products (studied in the same countries in other research projects), from large producers (such as tomatoes from large grower/shippers in Mexico).

- In the case of China, supermarkets buy a small minority of their vegetables direct from small farmers via buying agents. In the case of South Africa, small regional supermarket chains also buy their tomatoes direct from small farmers, via buying agents, as well as from the wholesale market.

- In China, Turkey, Indonesia, and Mexico, supermarket chains rely on emerging specialized/dedicated wholesalers. For a minority of the items in question. In China (for tomatoes/cucumbers) and Mexico (for strawberries) these are medium wholesalers, with locales in the wholesale markets, who source from other wholesalers and/or farmers. They sort and pack, and deliver to supermarket chains. In Indonesia, the specialized/dedicated wholesalers also have a field presence with packing plants and relationships with preferred suppliers among farmers and lead farmers. This is also the case for other products such as avocadoes and lemons in Mexico, as reported in a separate study.

iv. The reasons the South African leading chains buy direct from large commercial farmers, rather than relying on the wholesale markets are as follows:

- The existence, in South Africa, of a substantial group of large, produce farmers with technical capacity, makes it cost-efficient for the leading chains to set up preferred relationships with these large farmers and to obtain the required volume, quality, and consistency. Similarly, leading supermarket chains in Mexico source from large tomato growers/shippers, shown in a separate study.

- Smaller regional chains do not do this, but instead source from local wholesale markets and direct from small farmers, because of the smaller volumes required.

v. The reasons supermarket chains in other study countries source mainly from wholesale markets are as follows:

- While there is an emerging use of specialized/dedicated wholesalers in the cases noted above, the capacity of these is still limited as their emergence is recent.

- There is little or no access to medium and large farmers or supply companies for the produce crops studied. For example, in China there is none; in Mexico only Driscolls which supplies just a portion of the supermarkets' needs; in Indonesia Hikmah's and a few others, which similarly supply only a portion of the requirements, and in Turkey the medium-sized tomato farmers are focused on the more lucrative small export market.

- There are large numbers of small farmers in the strawberry sector of Mexico; and the tomato sectors of Turkey, China, and Indonesia; the potato sector of Indonesia; and the cucumber sector of China. It is not cost-effective for supermarkets to buy direct from these small farmers. Moreover, there are very few co-operatives among these farmers in any of the study countries.

- Turkey's tomato sector is a candidate for more differentiation because supermarkets can buy direct from co-operatives (and thus circumvent the regulation for retailers to source only from the licensed wholesalers in the wholesale markets). There are, however, few of these co-operatives as yet, partly because farmers rely on wholesalers for credit. Where the co-operatives and supermarkets have interacted directly, the study showed recent successes, so this relationship may develop further. The Indonesian tomato study gives an example of a farmers' group selling successfully to a supermarket, but this is the exception rather than the rule.

4.5 The restructuring of the processing sector – widely distributed over the seven countries, and more moderately in procurement

a) In all the study countries (except China, where processing was not examined), the food processing sector in general started to restructure before the retail sector, for the policy reasons noted above. However, there is evidence from all the studies that there has been a mutual benefit between the large processing sector and the supermarket sectors in each others' development.

b) There has been rapid consolidation in the processing sectors for the products in all the study countries, particularly in second-stage, but also in first-stage processing.

c) Supermarkets tend to source from the larger second-stage processors to ensure quality and reduce transaction costs. Smaller processors tend to be the main sources for traditional retailers (such as in dairy in Poland), except where the processing sector is already consolidated (such as the processed potato sector in Indonesia).

d) Large processors sometimes work in preferred-supplier relationships with small farmers on a semi-contract farming basis (such as tomato processors in South Africa and Turkey, dairy processors in Poland, potato processors in Indonesia, private and co-op processors in India, and some larger beef processors in Zambia). Credit, seed, inputs, and technical assistance are sometimes offered in these relationships, and the products collected. In other cases (such as most of the first-stage strawberry processors in Mexico, and smaller beef processors in Zambia) the relationship is merely that of the spot market.

4.6 Wholesale restructuring moderately distributed over the case study countries

a) It was noted above that there has been a rapid spread of wholesale markets (as physical structures, and in terms of volume) in most of the study countries, as a result of waves of public investment in the 1970s through the 1990s. This represented the first stage of restructuring from the previous situation of fragmented wholesaling. At the same time, there has been a proliferation of wholesalers and brokers off-market in the rural areas.

b) In the more advanced retail restructuring countries, there is evidence of a decline in the share of the wholesale markets (South Africa, Mexico).

c) Many of the studies show emerging consolidation over wholesale markets (China, South Africa), within wholesale markets (Mexico, Turkey), and in the off-market wholesale sector (Mexico, Poland, Indonesia). At the same time, there are cases where a second wave of public investment in wholesale markets outside the original areas (such as in Turkey and China) tends to work against inter-wholesale market consolidation. Where off-market wholesale consolidation is concerned, there is evidence in the studies for Mexico, Turkey, and Indonesia that wholesalers are buying more direct from farmers, and the role of the small local broker is declining.

d) Other types of restructuring are emerging in the wholesale sector, both on-market and off-market, the most prominent of which is the specialized/dedicated wholesaler, as noted in earlier work in Central America, Mexico, and South Africa. The case studies show that this type of wholesaler is also emerging in China, Indonesia, and Turkey.

    i. Typically in China for vegetables, and in Mexico for strawberries, is the on-market form of restructuring, in which the specialized/dedicated wholesaler has its main locale in the wholesale market, adds value by sourcing from other wholesalers and farmers, and sorting, packing, and delivering the product to the supermarkets.

    ii. An example of a form found in South Africa is Freshmark, originally a wholesaler that became dedicated to Shoprite and was eventually purchased by them as their supplier. An independent form is that of Bimandiri in Indonesia, supplying tomatoes to the Carrefour chain, with their main locale in the production area.

    iii. An intermediate form is the large wholesaler, dominant after a process of on-market consolidation, which becomes a main supplier for large supermarket chains, such as the two very large wholesalers on which chains in Mexico rely. These wholesalers provide value-added by sorting, packing, and delivering.

e) The studies note a relatively low degree of procurement restructuring among wholesalers, regardless of whether they are large on-market wholesalers, or off-market specialized wholesalers.

   i. The wholesalers tend to buy in on-the-spot relationships from the farmers, sometimes innovating locally by asking for sorting and quality differentiation from the farmer, or buying without grading and then sorting at the packing houses of the wholesaler on- or off-market.

   ii. The exceptions are specialized wholesalers with long-term and close relationships with major chains, such as Freshmark for Shoprite, or Bimandiri for Carrefour amongst others. In this case, they tend to have lists of preferred suppliers and maintain longer relationships and verbal contracts with them, in some cases providing technical assistance and collection.

4.7 Farm-sector restructuring

a) The meso studies did not test for the impacts of the above-mentioned downstream restructuring on the farm sector *per se*, so this concluding section puts forward hypotheses based on the studies.

b) While the retail and processing surveys in the meso studies identified cases where the supermarkets and processors source some or most from large or medium producers (such as from large ranchers in Zambia, from a large potato company in Indonesia, from a medium/large farmer contract scheme with Driscoll's in Mexico, and from large, commercial, preferred suppliers in South Africa), the survey samples of the micro studies were only of small farmers, and left the larger suppliers to case studies or just to note. The micro studies show not only the kinds of producers, but also the kinds of small farmers from which the downstream firms source, directly or indirectly, if at all.

c) With the exception of South Africa where they are in the minority, the meso studies show, that in all the study countries there are significant sets of small farmers producing the study commodities.

d) Some of the meso studies show that there are various market structure and regulatory constraints that buffer small farmers from substantial restructuring downstream. This is perhaps most visible in China where very little consolidation of the wholesale segment has occurred on-market or off-market. Thus, many thousands of very small wholesalers dominate the produce wholesale sector and have very little influence on farmers with whom they have only on-the-spot relations for many small transactions. To the extent that the wholesale market consolidates and the actors specialize and differentiate, or chains rely on off-market specialized wholesalers (such as in Indonesia tomatoes), this buffering effect is weakened and downstream restructuring is expected to have more influence on the farmers, as the supply chain between the retailer and the farmer is shorter. Moreover, in some countries the potential effects of downstream restructuring on farm-sector consolidation are further limited. Such countries include China with its prohibition on purchase or sale of land, Poland, with its restrictions on trading farm-level milk quotas, Turkey and India with restrictions on using wholesalers in the wholesale markets

f) The overarching hypothesis that emerges from the meso studies is that, while there is substantial restructuring at the retail, processing, and even wholesale levels, the transmission effect on the small farmers, controlling the extent to which the downstream companies source at all from small farmers (as noted in b) above) is mainly on the non-land asset differentiation of the farmers. Moreover, this is likely to be weak in the cases where there is little wholesale sector restructuring or where restructured wholesalers source in on-the-spot relationships (vegetables in China, potatoes in Indonesia, tomatoes in Turkey, and to some extent strawberries in Mexico). Given that the processors in all the countries have undergone more restructuring, and tend to have more direct relations with the producers, it is hypothesized that there will be greater non-land asset differentiation amongst farmers.

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Regoverning Markets is a multi-partner collaborative research programme analysing the growing concentration in the processing and retail sectors of national and regional agrifood systems and its impacts on rural livelihoods and communities in middle- and low-income countries. The aim of the programme is to provide strategic advice and guidance to the public sector, agrifood chain actors, civil society organizations and development agencies on approaches that can anticipate and manage the impacts of the dynamic changes in local and regional markets. The programme is funded by the UK Department for International Development (DFID), the International Development Research Centre (IDRC), ICCO, Cordaid, the Canadian International Development Agency (CIDA), and the US Agency for International Development (USAID).

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