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Governance and Trade in Fresh Vegetables: The Impact of UK Supermarkets on the African Horticulture Industry

CATHERINE DOLAN and JOHN HUMPHREY

Production of fresh vegetables for export has grown rapidly in a number of countries in sub-Saharan Africa over the past decade. This trade brings producers and exporters based in Africa together with importers and retailers in Europe. Large retailers in Europe play a decisive role in structuring the production and processing of fresh vegetables exported from Africa. The requirements they specify for cost, quality, delivery, product variety, innovation, food safety and quality systems help to determine what types of producers and processors are able to gain access to the fresh vegetables chain and the activities they must carry out. The control over the fresh vegetables trade exercised by UK supermarkets has clear consequences for inclusion and exclusion of producers and exporters of differing types, and for the long-term prospects for the fresh vegetables industry in the two major exporting countries studied, Kenya and Zimbabwe.

I. INTRODUCTION

International trade in horticultural products has increased markedly in the past two decades. Changes in dietary habits stemming from increased health awareness, together with demand for convenience foods, have accelerated year-round consumption of fresh fruit and vegetables and the sale of an increasing variety of prepared foods in industrialised countries. Some African countries have been able to benefit from this trade. Between 1989 and 1997, the value of exports of fresh vegetables from sub-Saharan Africa to the European Union (EU) increased by 150 per cent.¹

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Fresh vegetables are a good example of a non-traditional agricultural export crop, and they illustrate the potential for agricultural diversification and production of high-value crops. Nevertheless, this trade links African producers and exporters with very large European retailers. Food retailing has become increasingly concentrated in Europe. In 1996, the top five supermarket chains had a total food market share of more than 50 per cent in all but three EU countries (Spain, Greece and Italy) [Baas *et al.*, 1998: 25–7]. This process is particularly noticeable in the UK, where the largest six food retailers had captured a 76 per cent share of fruit and vegetable sales by 1997 [Fearne and Hughes, 1998: 29]. These firms have also invested heavily in the development of their supply chains, greatly increasing monitoring and control of suppliers. The resulting power asymmetries have been a cause for concern. Doel [1996], for example, describes the pressures suffered by suppliers to large retail chains in the UK, while Thrupp [1995] has documented the impact on Latin American growers of production of non-traditional export crops for the North American market.

This study analyses the trade linkages between producers and exporters of fresh vegetables in Kenya and Zimbabwe and UK supermarkets. It takes up the concept of governance in global commodity chains developed by Gereffi [1994] in order to examine how the competitive strategies of the supermarkets have led to particular governance structures that determine not only the types of product to be produced, but also production and quality systems, the extent and location of post-harvest processing and the structure of the horticulture industry in Kenya and Zimbabwe. Two basic questions are posed. First, governance: how is the fresh vegetable chain structured, which actors define what the chain requires, and how are these requirements transmitted to the various actors in the chain? Section II discusses the concept of governance and its relevance for the analysis of trade. Section III analyses the way in which governance is exercised. Second, consequences for African exporters and producers: how has involvement in the chain transformed the production and processing of fresh vegetables in Kenya and Zimbabwe? More specifically, what types of firms are included in the chain or excluded from it? Section IV examines how meeting the requirements of the UK retailers has influenced the nature of the horticulture business in Africa, focusing specifically on the cases of Kenya and Zimbabwe. Section V considers the limitations of the analysis.

II. GOVERNANCE IN COMMODITY CHAINS

The global commodity chain concept is just one of a number of approaches to inter-firm relations that draws on the simple idea that the design, production and marketing of products involves a chain of activities divided

between different enterprises. Various authors have developed this idea in different ways. For example, Hopkins and Wallerstein define a commodity chain as 'a network of labour and production processes whose end result is a finished commodity' [1994: 17], and apply it to the changing organisation of the world economy. Porter uses the terms value chain and value system to discuss company strategies in terms of the management of relationships with other firms, arguing that: 'Competitive advantage is increasingly a function of how well a company can manage this entire system. Linkages not only connect activities inside a company but also create interdependencies between a firm and its suppliers and channels' [Porter, 1990: 43-4].

Ruigrok and van Tulder [1995] discuss the restructuring strategies of leading global firms by using the concept of 'industrial complex', in which the core firm organises suppliers, workers and dealers, and maintains relations with financiers and governments. Similarly, Wilkinson has analysed the knitwear industry using the concept of 'productive system': 'It is possible to describe as a "productive system" the combination of design, product development, marketing, production and retailing by which products progress from their conception to the final consumer. In the markets for knitwear different types of "productive systems" coexist and compete' [Wilkinson, 1995: 1]. Each of these authors takes the idea of a chain of inter-firm linkages and applies it to particular circumstances, focusing on specific linkages and their characteristics. Their different perspectives and priorities generate different but overlapping concepts.

Gereffi took as his starting point the work of Wallerstein, but his concept of global commodity chains (GCCs) contains three new elements which are particularly useful for the analysis in this study. First, Gereffi has emphasised the fact that chains frequently involve cross-border co-ordination of the activities of independent firms. Secondly, Gereffi has emphasised the issue of governance, drawing attention to the fact that large retail and brand-name companies create inter-firm networks characterised by a high degree of co-ordination. Campbell and Parisotto have expressed this point in the following way:

Much international trade in goods and services cannot be thought of as a multitude of arm's-length transactions between countries. Instead, trade is organised within a structure or system of international production. In this sense, it is 'internalised' within the common ownership of multinational enterprises, or 'quasi-internalised' within a system of governance that links firms together in a variety of sourcing and contracting arrangements. Much international trade can therefore be said to be situated somewhere between 'markets' and 'hierarchies' [Campbell and Parisotto, 1995: 1].

Thirdly, Gereffi has highlighted the increasing role played by international buyers, retailers and brand-name companies in the trade of labour-intensive manufactured products such as garments [Gereffi, 1994]. In recognition of this, he distinguishes between two basic types of commodity chain. On the one hand, there are 'producer-driven' chains, typical of capital- and technology-intensive industries, in which chain governance is exercised by companies which control key technology and production facilities. On the other hand, there are 'buyer-driven' chains in which retailers and brand name companies exercise key governance functions. They focus their own activities on design, retailing and marketing, as well as the organisation of the chain itself. They define what is to be produced, but do not produce it themselves. The role of this type of non-manufacturing company in defining trade opportunities for developing countries is one of the central arguments of Gereffi's work.

The governance exercised by such companies has consequences not only for the inclusion and exclusion of firms in the chain, but also for the opportunities they have for upgrading – moving into more sophisticated functions within the supply chain or into the production of more sophisticated commodities. Gereffi [1999] sees upgrading as the process by which industries in developing countries acquire both new skills through export manufacturing and establish links with new commodity chains that can use these skills. In the garments industry, for example, upgrading involves not only a shift from the assembly of cut parts into garments to provide a 'full-package' service that supplies a complete garment, but also a shift in buyers, from manufacturers outsourcing part of their production to retailers looking to buy a complete product [Gereffi 1999: 52–3].²

But why should a commodity chain have to be 'governed' at all? Why do international buyers not use arms-length market relationships that do not require costly investments in governance and provide greater flexibility of sourcing to buyers?³ Two factors appear to be crucial. First, the increasing use of product differentiation strategies in developed country markets means that retailers derive competitive advantage from selling non-standardised products that are *not* generally available in the market, competing not only on price, but also on factors such as reliability, product variety, product quality and speed of innovation. This competitive strategy increases the need for supply chain governance. On the one hand, the supplier requires ever more complex information about changing market requirements, as well as assistance in meeting changing product specifications. On the other hand, the risks to the seller from poor quality products, deliveries, delays, etc. are considerable.

Secondly, governance requirements increase when developing country producers have difficulty in meeting the requirements of developed country markets. Keesing and Lall argue that:

A major problem associated with the marketing of manufactured exports from developing countries is that products made in a developing country for export to a developed one are generally quite different from the analogous products made for the domestic market ... As a result of these systematic product differences and changing product specifications, information must be collected and supplied, order by order on what is needed ... Often instructions on these points is part of the crucial information transmitted to suppliers. While the latter are still inexperienced, either buyers or someone must teach the details of procurements, quality control, inspection, packing, shipping documents required, sizes and size assortments, and much else different from what is done in production for the local market [Keesing and Lall, 1992: 178].

The need for governance is reinforced in certain markets by increased concern with labour, environmental and product safety standards, either through legal obligations or consumer, government and NGO pressures. These increase the responsibility of the retailer for what happens in the supply chain.⁴

Product differentiation and more complex product requirements need not, by themselves, create a need for close management of the supply chain. In situations where manufacturers are technically competent and have good market knowledge, governance structures may not be required. For example, retailers might be able to purchase high-fashion Italian shoes through arm's-length market relations. Similarly, complex supply chains for products such as computers can be managed through arm's-length market relations. But governance is required when the supplier lacks technical competence or market knowledge.⁵ Market failures in the area of information about markets and the provision of services to producers, together with the need to co-ordinate different parts of the supply chain require intervention by the retailers. Generally speaking, this option is only open to larger retailers, or to specialist international traders who have the resources and knowledge to manage international supply chains. Taking as given that large retailers and brand-name firms have deliberately eschewed the vertical integration route, while maintaining close control over the supply chain, this study will consider the consequences of this control for producers and exporters of fresh vegetables.

III. THE GOVERNANCE OF THE FRESH VEGETABLES COMMODITY CHAIN

Over the past 30 years, one of the most striking features of the retailing of fresh food in the United Kingdom has been the increasing dominance of large supermarkets. According to Gray and Kleih, 'Specialist greengrocers and fruiterers had a 46% market share [of the UK market] in 1980 but this had fallen to 26% by 1991' [1997: 30]. This process continued in the 1990s. By 1997, the multiple stores (supermarkets and major retail chains) accounted for 76 per cent of UK fresh fruit and vegetable sales [Fearne and Hughes, 1998: 29]. The horticultural value chain linking UK consumers and supermarkets with export firms and farmers in Africa has been directly affected by this process of retail concentration. Whereas imported horticultural produce was previously channelled primarily through wholesale markets, the largest UK retailers now control 70–90 per cent of fresh produce imports from Africa.

The dominance of the supermarkets in UK food retailing reflects a broader process of retail concentration that has been associated with radical transformations of supply chains. Supermarkets came to exercise increasing influence on commodity chains across a wide range of products. They developed their own brands, in competition with industry leaders such as Heinz, Kellogg and Schweppes. They developed sophisticated logistics systems, as described by Womack and Jones [1996], and they played a decisive role in developing products and supply channels.⁶ Generally speaking, large retailers have avoided direct involvement in production. They specialise in marketing and in the organisation of supply chains.

Supermarket retailing is characterised by oligopolistic competition. A small number of retailers battle for customer loyalty and market share, using product differentiation and heavy advertising as major weapons, even though the predominance of competitor-oriented reactive strategies undermines these attempts at differentiation. During the 1990s, the supermarkets were able to expand market share at the expense of smaller competitors. A combination of a market strategy based upon product quality and variety and heavy investment in both retail outlets and logistic systems proved successful.⁷

Fresh fruit and vegetables were a key area of competition between supermarkets, and the characteristics of competition between supermarkets were decisive for the rapid development of the African fresh vegetables trade. While food products as a whole are income inelastic, fresh fruit and vegetables are purchased disproportionately by higher-income consumers and fresh produce is crucial for attracting and retaining such customers:

Fresh produce has become what retailers describe as a 'destination' category – fresh fruit and vegetables is one of the few product

categories (along with fresh meat and wine) for which shoppers will switch stores. It is also one of the two remaining categories (along with meat) which is virtually all own label and thus over which they can exert considerable influence and control. As a result, over the past fifteen years, the fresh produce department has moved from the back of the store to the front and has doubled its shelf area in store ... [Fearne and Hughes, 1998: 5].

Estimates of the growth prospects for the fresh fruit and vegetable market as a whole vary, but sales of speciality vegetables^a and prepared fresh food grew considerably in the 1990s. Fearne and Hughes [1998: 5] estimated that 'sales of speciality vegetables have increased by 21 per cent in volume terms during the period 1993-96'. They also drew attention to the rapid growth in sales of ready-to-eat, pre-washed salads, whose sales increased by 34.3 per cent in value terms between 1994 and 1996 [Fearne and Hughes, 1998: 25].

The countries of sub-Saharan Africa have found a niche in this trade. An indication of the extent of their involvement is given by Table 1, which shows that a wide variety of fresh vegetables were sourced from developing countries to UK supermarkets in spring 1999. African countries accounted for most of the produce. The market for fresh vegetables imported from Africa has increased in volume and product variety, moving from off-season supply towards an increasing year-round supply. This not only expanded the market for imported fresh vegetables, but also led to a decisive transformation in the structure of the trade and participating firms. The governance of the chain is a key factor in this transformation. This can be discussed in terms of the positioning of the chain in the market, the structure of the chain and monitoring of and the provision of assistance to firms in the chain.⁹

The Positioning of the Chain

The supermarkets have emphasised fresh, healthy food, ease of preparation and innovation in order to attract the high-spending, middle-class consumers. Competitive strategies have emphasised:

- **Quality.** The supermarkets have extended the concept of self-service to fruit and vegetables, and this reinforces the need for instant, appealing produce. According to one senior supermarket manager, the produce left on the shelves by customers determines the quality standard.
- **Consistency.** The supermarkets aim to supply the customer with a product that is consistent in appearance and taste, not only at any one time, but also preferably across the growing season.

TABLE 1
SPECIALITY VEGETABLES IN UK SUPERMARKETS, APRIL 1999^(a)

Product	Asda	Marks & Spencer	Sainsbury's	Waitrose
asparagus	Zimbabwe	Thailand	Peru Thailand	Thailand Zimbabwe
asparagus, baby corn and mangetout	Guatemala / Spain / Thailand ^(b)			
baby corn/ dwarf corn	Thailand	Kenya	Thailand	Thailand
baby corn and mangetout	Kenya		South Africa Zimbabwe	Gambia
baby corn, mangetout and carrots		Thailand / Guatemala / Holland		more than one country
mangetout	Egypt Guatemala Kenya	Kenya	Guatemala Kenya Zambia	Kenya
dwarf beans	Egypt		Kenya	
fine beans	Kenya	Kenya	Gambia Kenya Zambia	Gambia
fine beans and baby carrots	Kenya			
hard-shell garden peas		Kenya Gambia		
round beans				Egypt
stringless beans				Zimbabwe
runner beans	Zimbabwe	Zimbabwe	Kenya	
runner beans & carrots		Various countries		
sugar snaps			Guatemala South Africa	Guatemala Kenya
brussel sprouts		Kenya		
broccoli		Zimbabwe		
courgettes		South Africa		
globe artichokes	Egypt			

Notes: (a) The country of origin in the table is that stated on the label. This is sometimes accidentally or deliberately mis-specified.

(b) Where various countries are indicated as a source with a slash between them, this means different parts of the product combination are sourced from different countries. Where more than one country is indicated without a slash, products were available from these countries at the same supermarkets. In some cases, the products were identical, in other cases they were packed in different ways (cellophane bags versus trays, for example).

- **Variety.** Supermarkets have increased the variety of basic products such as tomatoes by introducing cherry tomatoes, vine-ripened tomatoes, etc., and introduced new products, such as papaya, okra and snow peas.
- **Processing.** Supermarkets have offered an increasing range of prepared foods, involving washing and chopping of food products. Pre-washed salads and vegetables that are ready for immediate cooking have become increasingly popular.
- **Product combinations.** Customers can now buy product combinations, such as peeled and chopped papaya packaged together with wedges of lime, and packets of vegetables combining a range of peeled, sliced and washed food that can be put straight into stir-fry dishes.
- **Packaging.** For speciality vegetables, supermarkets have stopped presenting many products in loose form and shifted towards prepacking produce in cellophane wrappings and trays.
- **Reliability of Supply.** Supermarkets believe that customers will switch to other stores if products are not available at the time they go shopping. Therefore, continuity of supply is an important goal.
- **Price.** While price is not the main focus of competitive strategies, it did become more important at the end of the 1990s as market shares reached saturation point and reactive competitive strategies limited the success of differentiation strategies.

The scope for differentiating and processing even simple products is shown in Table 2. The price charged for Class 1 (the best) carrots in one supermarket in the Brighton area was 39.4p per kilo for loose carrots. Putting the same carrots into bags doubled the price. The price of peeled and sliced carrots was seven times as high as the loose product, at £2.83 per kilo, while a new product variety, the 'mini-crunch' carrot designed as a snack, retailed for £6.00 per kilo. Clearly, product processing and differentiation adds significantly to margins.

TABLE 2
ADDING VALUE TO CARROTS

Product	Weight and Price	Price per kilo
Basic carrots, Class 1	loose, 18p per lb.	39.4p
Basic carrots, bagged, class 1	1 kg bag, 87p	87p
Peeled and sliced carrots, in bag	350g bag, 99p	£2.83
Carrot batons (peeled, chopped, washed, ready-to-eat)	200g bag, 59p	£2.95
Peeled, ready-to-cook mini-carrots	300g bag, 85p	£2.83
Mini-carrots, in tray	225g tray, 99p	£4.40
Mini-crunch carrots (peeled, chopped, washed, ready-to-eat)	100g bag, 60p	£6.00

Source: Authors' observations in one UK supermarket.

A competitive strategy based on product variety, packaging and processing would, in itself, place greatly increased demand on the supply chain. The supermarkets have also had to meet regulatory requirements. In particular, the 1990 Food Safety Act requires retailers to demonstrate that they have shown 'due diligence' in the manufacture, transportation, storage and preparation of food [Marsden and Wrigley, 1996]. In response to the requirement to demonstrate 'reasonable' care to ensure food safety, UK supermarkets developed systems that allow products to be traced from the field to the supermarket shelf. More recently, supermarkets have come under some pressure to ensure that their production systems are socially and environmentally sound. The issues of labour and environmental standards gained increased importance in the minds of consumers, and the UK government actively promoted the involvement of retailers in the development of standards. Retailers have become acutely aware of the damage that can be caused to their image by exposés of poor labour conditions (particularly child labour) and environmentally damaging production processes. As a result, retailers developed codes of practice that address issues of health and safety, employment conditions, and environmental management throughout the supply chain.

The supermarkets make the key decisions about the positioning of the chain. While they frequently argue that they merely respond to customer demands and government obligations, the supermarkets make strategic decisions about how to respond to these pressures. This can be seen in differences in the range of products and the types of presentations offered to customers,¹⁰ even though imitative behaviour tends to narrow the differences between competitors. Supermarkets both anticipate and shape customer needs and make decisions about how these needs should be met. Furthermore, it was clear from interviews with importers that supermarket buyers play the decisive role in determining which products will be stocked, the packaging presentations to be used, etc. Importers do devise new product and presentation ideas, but these have to be approved by the supermarket buyer.

Achieving continuous, reliable supply of a broad and changing range of products from different countries around the world requires a highly sophisticated supply chain. The governance of the chain has to deliver these performance requirements. This governance has two parts: the specification of the structure of the chain, and the systems that ensure the chain's actors meet the required performance standards.

The Structure of the Chain

When the UK supermarkets first began to sell fresh fruit and vegetables, they bought domestic and imported produce from wholesale markets. Such

markets are suitable for standardised products whose characteristics are clear at the point-of-sale. For horticultural products, this type of half-channel network¹¹ is still evident in international trade of cut flowers (via the Amsterdam auction) and for some fresh fruit. However, as the supermarkets began to require increasing product variety, customer-specific processing and greater knowledge of production and processing systems (in order to reduce the risk of exposure to failings by their suppliers), they greatly increased the degree of control exercised in the chain by reducing the number of suppliers and tightening linkages in the chain. The basic actors remained the same – African growers, African-based exporters, UK importers and the UK supermarkets – but the number of actors, the distribution of functions between them and the relations between them changed.

In the early 1990s, UK importers could still source produce from a range of exporters, who would buy produce from a range of growers according to price and availability. By the late 1990s, the linkages in the chain had become much tighter. UK-based importers source produce from various countries in order to ensure year-round availability, but at any one time of year they will have one or two countries supplying produce, and in each country the importer will usually deal with one major exporter. While supermarkets may enter into exclusive arrangements with UK importers and African exporters, sourcing the whole of their supplies of particular product lines at certain times of year from just one exporter, this is the exception. Following the disruptions to production in certain African countries caused by El Niño, some importers had been encouraged by their supermarket customers to diversify their sources of supply again. The director of one leading UK importer explained that not only was he expected to diversify his sourcing and reduce reliance on his main supplier, but also that his largest customer had specified that a new source be developed in one particular country, Egypt.

The tightness of linkages in the chain does not mean that there is reciprocal dependence between supermarkets and their suppliers. While such relationships are frequently durable, each supermarket will source from a number of fresh vegetable importers. The distribution of orders between suppliers varies according to the prices offered, and supermarkets do switch between suppliers. Similarly, importers will source from various countries, and as was seen above, they may be encouraged by supermarkets to develop competing sources of supply. It was seen clearly in Table 1 that similar or identical produce was available from different countries in the same supermarket at the same time of year.

This is the 'ideal' situation for the supermarkets. In practice, there are two constraints on the full development of this degree of control. First,

supermarkets have varying volume requirements. For example, when products are being promoted, or there is an unexpected peak in demand, it may be necessary to find additional suppliers, and in these cases the degree of supervision will be lower. Secondly, a high degree of control is easiest to exercise when there is a severe power asymmetry between supermarkets and suppliers. This does appear to be the case in sub-Saharan Africa, where there are various countries and exporters competing for market share. However, in the case of Spain, which is an essential source of low-cost Summer fruit and vegetables, the need to find Spanish suppliers gives these suppliers more latitude to resist supermarket demands. Some UK importers acknowledged that standards imposed on African growers and exporters cannot be applied to Spanish firms.

Meeting Performance Standards

If the chain is to meet the requirements placed upon it, its performance must be monitored, and systems put in place to ensure that suppliers can and do meet standards. Producers and exporters wishing to supply the UK market need monitoring systems that ensure compliance with retail (product quality) and legislative (due diligence) requirements. Exporters must be up-to-date on UK legislation related to pesticides, residue levels¹² and food safety and ensure that there are sufficient hygiene facilities and protective clothing on site. Further, they have to allocate managerial resources to training personnel on quality, safety, hazards and other aspects of quality assurance, as well as develop monitoring tools and evaluation criteria to satisfy their overseas customers. All export firms now have sophisticated quality assurance systems that document seed procurement, planting schedules, pesticide and fertiliser use, spraying, and personal hygiene to guarantee food safety.¹³ Yet increasingly retailers have expanded the standards that exporters must meet, moving beyond procedures to ensure regulatory compliance to addressing broader issues such as integrated crop management (for example, Nature's Choice at Tesco), human rights and environmental protection. In addition, in 1997 UK retailers, in conjunction with supermarkets in continental Europe, launched the European Retailers Produce Working Group to develop and harmonise Integrated Crop Management standards worldwide [Miller, 1999]. This will intensify the burden of monitoring for African exporters.

The supermarkets use decisions about inclusion and exclusion to ensure that these standards are met. Before a supplier is included in the chain, it is usually subject to an audit of its facilities, and it must demonstrate that it can meet the requirements described above. Conversely, extreme cases of poor performance or major lapses in food hygiene and safety standards can lead to suppliers being excluded from the chain altogether.

Monitoring and auditing of production and processing systems is carried out by supermarkets and importers. Supermarkets usually visit African suppliers twice during the year to ensure that produce is grown, processed and transported in compliance with their requirements. The seriousness with which retailers view compliance with due diligence is reflected in Tesco's formation of a 'hit squad', which is prepared to inspect any supplier without prior notice to ensure compliance [Fearne and Hughes, 1998]. However, short visits by supermarket inspectors to exporters and growers in Africa can only provide limited oversight. It is not possible to visit more than a few growers or farms, particularly when export farms use a variety of different production units. In fact, retailers are beginning to use third party auditors paid for by producers to ensure compliance with standards.

While the supermarkets establish the standards and carry out some direct monitoring, the responsibility for the day-to-day enforcement of procedures is generally the responsibility of importers and exporters. Importers visit their African suppliers on average three to four times of year. They usually accompany supermarket buyers as well as visit on separate occasions. In some cases importers have permanent staff in Africa, not only to ensure compliance, but also to provide technical assistance to exporters. The closeness of ties between exporters and importers is reflected in the tie-ups seen between them. Some of the largest African exporters have set up their own import companies in the UK and/or Europe in order to improve access to the market, while some UK importers have taken equity stakes in exporters in Kenya and Zimbabwe.

IV. THE STRUCTURE OF THE SECTOR IN SUB-SAHARAN AFRICA

The previous section has shown the outputs required from the chain by UK supermarkets, and it has analysed the chain's structure and decision-making. How does this translate into the specific characteristics of the fresh vegetables industry in Kenya and Zimbabwe?

Export horticulture has been one of the bright spots of African development. It has raised production standards in agriculture, created supporting industries, and provided considerable employment in rural areas. While three countries – South Africa, Côte d'Ivoire, and Kenya – account for the majority of this success, in the past decade Zimbabwe and Zambia have also experienced rapid horticultural export growth. Clearly, part of this success is attributable to European Union trade preferences, which give better access to European markets for products from ACP countries, and in the next few years this advantage will be undermined by trade liberalisation. An analysis of the likely impact of trade liberalisation on African horticultural exports by Stevens and Kennan [2000] suggests that this

problem should not be overestimated. Most existing non-African suppliers in European markets enjoy trade privileges similar to those of the African countries, and trade liberalisation is unlikely to impact African exporters in the next few years since current trade preferences will be maintained during a preparatory period (2000–2008) [Stevens and Kennan, 2000: 34; Morrissey, 2000: 6]. Competitive threats certainly exist – the rapid rise of Egyptian fresh vegetable exports is evidence of this – but this has occurred independently of trade liberalisation.

Several recent studies¹⁴ have highlighted a number of factors behind Africa's horticultural boom. These include:

- *Non-interference by government* in the commercial dimensions of the business.
- *Preferential trade agreements* such as the Lomé Convention.
- The achievement of sub-regional/cross-border *economies of clustering*, which provides a critical mass of activity for technical learning, market information flows, the development/spread of trained manpower.
- *International technical and marketing strategic partnerships* which have assisted in technology transfer, logistics, market penetration, and the creation of a market identity for African products.
- The effective coordination of *internal and international logistics* at the industry level, involving intra-firm co-operation [Thoen et al., forthcoming].

Exports of horticultural products to the UK have grown considerably since the 1980s. Kenya was still by far the largest exporter of the vegetables included in categories HS 0708 and 0709 to the European Union as a whole in 1997, and Zimbabwe was the second-largest exporter. In both countries the price per ton of exports continued to rise in the period 1989–97, reflecting their growing prominence in the trade of pre-packed and prepared vegetables, salads and cut flowers to EU markets.

In Kenya, export horticulture has grown from a small trade centred on Asian vegetables (okra, chillies) during the 1960s to an extensive trade that delivers approximately 75 products to dozens of overseas markets [Jaffee, 1995]. While Kenya's trade began with a small number of Asian-owned family enterprises, by the 1980s several well-financed exporters had entered horticulture, viewing direct sales to retailers as a way to exploit their advantages in investment, scale and market linkages. In both Kenya and Zimbabwe, the fresh vegetables trade is entirely under the control of a few private individuals and companies. These exporters have changed the nature of product sourcing. Until the 1990s, the majority of produce in Kenya came

from smallholders, who sold produce under spot market arrangements through intermediaries or 'middlemen' [Harris, 1992; Dijkstra, 1997]. These middlemen sold produce to small and medium sized firms, who channelled it through wholesale markets to UK retailers. However, today the majority of export horticultural produce is destined for supermarket shelves. In Kenya and other major horticultural exporting countries in sub-Saharan Africa the market share of smallholder production and small export firms has declined and the industry is dominated by a few large exporters sourcing predominantly from large-scale production units.

While some producers and exporters have clearly benefited from the move toward direct supermarket sales due to increased access to markets and product information, many more producers and exporters have fallen out of the market. Little is known about the competences and strategies of those who have been successful in securing a position in the chain and even less is known about those who have lost market access in the face of competitive challenges. This section examines the position of African exporters and producers in the fresh vegetable trade, exploring the capabilities required to meet the competitive challenges of the industry.

Concentration in the Export Sector

There is considerable scope for growth in the export horticulture sector. The market is expanding and there are significant opportunities for African firms to become players in overseas markets. However, inclusion in the chain is contingent upon meeting the requirements described above. These requirements have, first, favoured the concentration of the export trade in the few, large firms, and, secondly, shifted production increasingly to large farms, many of which are owned by the exporters. As a result, small and medium-sized exporters, and small growers have been excluded from the supermarket chain. To compete in this trade exporters need well-developed organisational capabilities, investment in post-harvest facilities, sophisticated logistics, large volumes and close relations with European importers.

Organisational capabilities: The demands for consistency of quality, reliability of supply and due diligence place considerable organisational burdens on African exporters. First, both growing and processing systems must be managed so as to produce reliable supply of high-quality produce. Good management along the chain is essential to produce good quality produce and prevent later deterioration. This requires both control of in-house systems and management of suppliers, and exporters must prove that they have the necessary control mechanisms in place. Second, regulatory requirements such as due diligence require suppliers to oversee the use of

chemicals, undertake audits, and develop monitoring procedures. The competitiveness of African exporters is linked to their reputation for food safety and complying with standards involves all aspects of their business. They have to allocate managerial resources to training personnel on quality, safety, hazards and other aspects of quality assurance, as well as develop monitoring tools and evaluation criteria to satisfy their overseas customers. Large exporters can invest in the management systems to meet these requirements, while small exporters lack both the resources to ensure compliance and a management system through which to trace accountability.

Post-harvest facilities: Staying in the fresh vegetables business requires considerable investment in post-harvest facilities. This investment arises from several factors. Firstly, the quality requirements of the UK supermarkets necessitate close management of post-harvest activities. The product deteriorates rapidly, and the post-harvest climate from farm to supermarket shelf strongly governs product quality. Products must be placed in a cool environment shortly after harvest, transported in a refrigerated vehicle to packhouses, where product is cooled, graded and packed under temperature and humidity controlled conditions. Cold storage is now an integral part of the supply chain, and in both Kenya and Zimbabwe large exporters have invested in state of the art methods including chilled chlorinated water for washing.

Secondly, in the horticultural chain, market power has shifted from those activities that will lower cost to those that will add value in the chain [Boehlje *et al.*, 1998]. There is a growing tendency to push these value-adding functions back along the chain to the source of supply. Today, a substantial amount of produce sold in the multiples is packed and barcoded to differentiate products, varieties, countries and suppliers. To the extent that these activities are performed in the source country, they require considerable investment in perishables handling facilities and equipment.

Pushing back these functions into Africa has a number of advantages for the supermarkets. Adding value to vegetables is labour-intensive and African labour is cheaper. It reduces repackaging in the UK and enables defective products to be detected and discarded in Africa. In addition, processed products have a higher value-to-weight ratio, which reduces transport costs. Taken together, these three factors make it likely that competitiveness will rest on securing the skills and investment capabilities to add value in Africa.

Thirdly, as exporters move away from simple products towards more complex product processing and presentations, greater investment is required. Products packed in trays require more complicated machinery

than products wrapped in cellophane packets. Further investment is required if exporters wish to move into high-value-added activities such as ready-prepared vegetables and salads. These require 'high care' facilities that meet European hygiene regulations. One importer estimated that it would require an investment of US\$500,000 to set up a processing unit for such products. These are asset-specific investments that are not easily transferable to other sectors, which not only exclude small exporters but render the larger firms locked into the UK retail market in order to recoup their investment.

Logistics: The retail sector demands flexibility and reliability in supply. This combination is hard to achieve. Reliability of supply is most easily achieved by keeping stocks in the system, but the supermarkets wish to minimise the time from farm to supermarket shelf and pass the costs of inventory control back to exporters [Hughes, 1999]. Rapid turnover means greater freshness, and in Kenya and Zimbabwe large exporters have shifted towards JIT management techniques in order to reduce the time between harvesting, packing and delivery. They must be prepared to respond quickly to changes in supply and demand, often within 24 hours, or bear the loss of unharvested product. As a result, logistics is now a core competence in the chain and exporters supplying UK multiples must be able to respond quickly and efficiently to changing orders.

The supermarkets' emphasis on logistics capability also places a premium on up-to-date market information within the supply chain. The profits of the supermarkets have been realised to a large extent by substantial investment in IT systems that track ordering and sales, identify their customer base, and organise storage, delivery and transport. The ability to finance investment in IT has given large firms a competitive advantage over those who are unable to reduce costs, trace customers, and adopt customer-specific marketing [Poole, 1997]. In Kenya and Zimbabwe, exporters who have adopted electronic integration have experienced significant cost savings over those who still rely on faxes or telephone communication.

Finally, the demands for rapid and reliable delivery make securing air cargo space a priority. Approximately 93 per cent of Kenya's fresh horticultural exports are shipped by air and the availability and cost of airfreight have long been a central problem for African exporters [Barrett *et al.*, 1997]. In fact for many large exporters, these problems have provided the impetus to gain control over the distribution process through joint ventures with freight forwarders. Yet this requires having the scale of operations to consolidate and negotiate air cargo space with commercial airlines, which small exporters do not have. Instead smaller exporters are forced to secure space on passenger airlines, which are reluctant to accept

pre-booked space [Barrett *et al.*, 1997]. When space is not available, produce often deteriorates on the tarmac before being returned to cold storage. Small exporters have very little power against the airlines and fear that both the availability and price of cargo space may drive them out of the market. As one exporter claimed, 'If we start making claims against carriers for spoiled produce, the rates will start climbing. We can't afford that.' This makes smaller exporters far less able to guarantee either the quality or reliability of their products in overseas markets.

Scale: The analysis so far has pointed to the number of factors, which clearly work in favour of the large exporters in the fresh vegetables industry. These include their management and investment capabilities, and their access to transport. One additional factor favours concentration in the sector: the rationalisation of the supply base. When the supermarkets rationalised their supply base in the 1990s, the volumes required from their 'dedicated' exporters increased greatly. The supermarkets have reinforced this trend because they believe that only the largest suppliers can reduce costs.

Innovation: relationships with importers: In an industry where product development and diversification are an important source of competitive advantage, innovation has become a key source of power and security in the supply chain. Suppliers who assume responsibility for product and packaging innovation greatly increase their value to the supermarkets and minimise their risk of substitution.

The relationship between exporters and importers is crucial for innovation, particularly since information about consumer preferences and product specifications is now transmitted through the closed channels of 'dedicated' suppliers. The development of long-term relationships with European importers has brought several advantages to African exporters and all of the leading exporters have been involved with the same importer for between five and ten years. Increasingly, importers are taking the lead in product development, and working with their best suppliers to provide improved products, packaging and presentations. As one exporter claimed, 'Occasionally a supermarket will come up with an idea. But this is really part of our business. You have to do this. You have to provide the whole package to keep your position in the market.' The exporter cannot do this alone. Cape Gooseberries, King Passion and Runner Beans are all examples of products that Zimbabwean exporters developed in concert with their respective importers. Yet the costs of innovation are borne by exporters in Africa, who can never be certain if the product will sell once on supermarket shelves. As a result, pushing innovation down the supply chain reinforces

the concentration of the export trade to those who can absorb the potential losses from unsuccessful product innovations.

In addition, exporters are expected to participate in promotional offers. Horticulture promotions are typically given a standard on-shelf price reduction, where the cost of the product is reduced for a limited time period, or where extra produce is given away at no additional cost [Chetwood, 1997]. As one exporter said, 'Sure I'm a dedicated supplier ... dedicated to paying [the supermarket] for promotions, for shelf space, for farm visits and holidays.' All of the exporters interviewed in Kenya and Zimbabwe bore the costs of product promotion. As a result, only those African exporters who have the cash flow to withstand temporary losses in anticipation of future gains can fulfil supermarket demands for promotion.

All of these factors taken together weigh strongly against the survival of small and medium size exporters in the fresh vegetable chain. While there are over 200 licensed fresh produce exporters registered in Kenya, only 50 are consistently operative, and the other 150 exporters exploit favourable short-term market conditions, entering and exiting the industry sporadically during the October–April peak season [Jaffee, 1995]. Small and medium-size export firms remain largely dependant on arms-length marketing relationships, exporting bulk produce to wholesale markets, which is now only marginally profitable for African suppliers. The quality of their supplies has been variable and they have yet to develop the intensive supply chain relationships needed to obtain up to date information or to secure their position in the chain.

The consequences of these requirements on the structure of the industry are clearly evident in both Kenya and Zimbabwe, where the top five exporters controlled over 75 per cent of all fresh vegetable exports in the late 1990s.

One exception to the tendency toward concentration may be organic produce, for which there is both a price premium and a significant unmet market demand [Fresh Produce Journal, 1999]. While the amount of organic produce has increased in the last year, the supply base in the UK is still very fragmented and supermarkets have little option but to source from smaller companies, several of which are located overseas. This means that smaller African exporters still have an opportunity to penetrate this market, particularly since organics do not presently require the scale and investment of exotic produce lines.

The Growers

It has been argued that there are strong tendencies towards concentration among exporters. Are there similar tendencies towards concentration at the production stage? There is clear evidence from Kenya and Zimbabwe that

TABLE 3
SOURCE OF SUPPLY BY TYPE OF PRODUCTION UNIT (%)

	Own Farm Production or Leased Land	Large Commercial Farms	Smallholders
Kenya	40	42	18
Zimbabwe	49	45	6

Source: Author interviews with leading exporters in Kenya and Zimbabwe.

two processes have transformed the production base. The first is the decline in smallholder production. In 1992, close to 75 per cent of fruit and vegetables in Kenya were grown by smallholders [Harris, 1992]. By 1998, four of the largest exporters in Kenya sourced only 18 percent of produce from smallholders, as can be seen in Table 3, and it is unclear what portion of this output was destined for supermarket shelves. In Zimbabwe, five of the largest exporters sourced less than six per cent of produce from smallholders. The second is that there are tendencies towards vertical integration within the chain. Several large exporters that had bought in most or all of their produce in the mid-1990s have begun to acquire their own growing capacity. This section explains the reasons for both these tendencies.

The decline of smallholder supply: Exporters that wish to source part of their output from smallholders face a number of well-known problems that exist irrespective of the markets being supplied. These include the need to provide credit at interest rates affordable to small farmers, loan defaults and side-selling to alternative markets. Smallholders also suffer from logistical constraints resulting from poor roads and unreliable transport in rural areas,¹⁵ which means that they are unable to maintain the quality required for UK supermarkets. In particular, smallholders supply must meet the needs of:

- Consistency across production units and through the season, which means controlling variation in agronomic practices (harvesting, crop rotation and pesticide application) across a large number producers.
- Maintaining post harvest quality and preventing deterioration, which means developing dispersed cold storage facilities close to farms.
- Ensuring compliance with health and safety requirements, which means maintaining confidence in pesticide use and hygiene conditions across a broad range of producers.

- Ensuring compliance with ethical trade commitments, particularly with respect to child labour and worker safety.
- Communicating changes in procedures to a large number of producers when product or growing innovations are made.

Clearly these financial and organisational challenges have to be achieved at an acceptable cost. However, the major challenge is to convince the UK supermarkets that smallholder sourcing endangers neither quality nor safety.

It is easy to make a case against smallholders. For example, it can be argued that the transaction and supervision costs of sourcing from a large number of dispersed producers are far greater than sourcing from a small number of large producers. However, these arguments underestimate the problems associated with large size and ignore the benefits of smallholder production. First, there are some commodities for which smallholders have a comparative advantage. French beans, Kenya's largest fresh vegetable export to the UK, is widely considered to be less amenable to capital intensive, mechanised production due to the labour-intensive requirements in both production and packing. Second, large farms require supervision of wage labour, whereas smallholders use family labour, which is both low-cost and self-supervising [Collins, 1995]. Third, small plots and intercropping help to reduce problems associated with the spread of disease and wind damage. Finally, smallholder sourcing is an effective response to problems of land scarcity (particularly in Zimbabwe, where land is a politically sensitive issue) and the need to extend the benefits of the trade to broader segments of the rural population.

In fact, two of Africa's largest horticultural exporters have shown that smaller producers can meet the quality requirements of the UK market. In both cases, the exporter has assumed responsibility for organising growers, arranging finance, providing technical support and ensuring traceability.¹⁶ However, UK supermarkets remain wary of sourcing from small farmers. They realise that failure to meet food safety or ethical trading standards can result in bad publicity and undermine their position in the market place. Because of this, they believe that concentrating their grower base will reduce their exposure to risk by giving them greater control over the production and distribution processes.¹⁷

Vertical integration: If smallholders are being marginalised, from what types of production units do exporters source their crops? It can be seen in Table 3 that among a group of ten large exporters in Kenya and Zimbabwe produce was sourced equally from exporter-owned plantations and independent, large commercial farms. Yet this average figure conceals some

variation in sourcing policies. Two export farms in Zimbabwe grew 100 per cent of their produce on land that they owned or leased.¹⁸ Three of these ten companies relied entirely on production from independent farmers, almost all of which came from large farms under contract.¹⁹ In the remaining five cases, exporters sourced produce from a mixture of their own farms and from large farmers. Different products and/or varieties are typically grown on exporter-owned plantations and on large commercial farms. This facilitates specialisation and enables exporters to capitalise on climatic differences.

In much of Africa, the dominance of large exporters has given rise to growing numbers of large, commercial farms.²⁰ As competition has intensified, many small and medium-sized exporters have shifted to growing crops for the large exporters rather than shouldering the risk of exporting. This was clearly seen in the case of Pumpkin Ltd., a Kenyan grower, whose falling margins forced them to withdraw from direct exporting and supply a leading Kenyan exporter instead. This is a trend also seen in other African countries. In The Gambia, for example, close to one-third of export farms sell the majority of their produce through Radville Farms, which is owned by a transnational corporation with an import subsidiary in the UK [*Little and Dolan, forthcoming*]. This trend is likely to continue as more and more large commercial farms find it difficult to secure overseas market contacts and air cargo space.

Despite the increase in large commercial farms, exporters still source at least some of their produce from their own farms. As one Zimbabwean exporter claimed, 'It is absolutely imperative to control your own production' to attract business from the multiples. There are three main reasons for this. First, control over one's own production guarantees continuity of supply and reduces the risk of losing suppliers to competitors. Secondly, possessing at least some land for growing crops provides the exporter with knowledge about production issues and innovation and problem-solving capabilities. In an industry increasingly characterised by innovation and the need for rapid problem-solving, these are important. Thirdly, some exporters (and their associated importers) believe that vertical integration provides greater control and greater scope for reducing costs. According to one leading UK importer, a key factor in losing a supermarket contract was the fact that its main African supplier had no production facilities of its own.²¹ As a result, the African supplier purchased one of its competitors (with financial assistance from its UK importer) in order to gain access to land.

It seems likely that the concentration of production on large units will continue. The early entrants to the industry started with small-scale production. In contrast, new entrants into industry in sub-Saharan Africa

entered the horticulture trade with well-established capabilities and market linkages, as well as substantial investment in post-harvest facilities.²² Zimbabwe, for example, did not begin exporting horticultural products until the 1980s, but came into the market with the scale and investment to attract the multiples. Similarly, the recent boom in imports of fine beans from Egypt has been based on pre-existing capabilities in growing the less sophisticated bobby beans. When supermarkets and importers wish to develop new sources of supply, they look for producers that already have the potential to meet the exacting requirements of the fresh vegetable chain.

Upgrading and Security in the Supply Chain

The previous sections have shown how African exporters have struggled to keep pace with market trends and best practice in the industry. Several exporters have managed to develop intensive relationships with overseas customers and exert greater control over the supply chain through their integration of freight forwarding and importing activities. These larger, more aggressive producers/exporters have diversified their marketing outlets, providing year-round products to supermarket chains, and increasing their sales to other regions in Europe and the Middle East. In essence, these exporters have acquired a broad range of functions and have secured a valuable position in the horticultural supply chain.

Upgrading opportunities have arisen partly from the re-positioning of the fresh vegetables chain by the supermarkets. A continuing emphasis on healthy eating, food preparation and ease of use has led to a product diversification and more complex and extensive processing. In the 12 months following the survey of supermarket shelves whose results are shown in Table 1, signs of product development were evident. Organic produce sourced from Egypt could be found at one supermarket, along with "ready-to-microwave" product combinations from Kenya. At the same time, some upgrading has taken place as a result of a transfer of functions within the chain from the UK to Africa, as in the case of the transfer of packaging and labelling to Africa exporters.

This type of upgrading differs in one important respect from the upgrading in manufacturing described by Gereffi [1999]. Gereffi associates upgrading with a shift of customers and marketing outlets. Higher-value products are sold to different types of retailers. In the fresh vegetable chain, the same retailers are redefining their product ranges and creating upgrading opportunities.

Yet upgrading is a complex process. As Gereffi [1995] notes, as industries become globalised, exporters face shorter time periods in which to exploit their competitive advantage. The rewards for the early innovators of new varieties, presentations and packaging are extremely short-lived and

virtually every developing country in the world with a suitable climate is now trying its hand in the export horticultural trade [Hirst, 1994]. The dominant position held by Kenya just a few years ago has been challenged by the entry of new African producers such as, Zimbabwe, Zambia and Tanzania, and by the growing importance of producers closer to the European market (and hence with significantly reduced freight costs) such as Egypt. It is a characteristic of buyer-driven commodity chains that buyers will seek new sources of supply, and interviews with UK importers indicated clearly that their supermarket customers expected them to find new sources, particularly in order to remain competitive on price. Quite justifiably, exporters in Kenya and Zimbabwe fear being pushed out of the market by new entrants or at the very least forced to accept lower margins.

As new market entrants challenge Africa's position as an early innovator, it becomes imperative that export firms be proactive in market and product diversification. According to Boehjle *et al.* [1998] power in the supply chain lies in possessing resources and capabilities that are not easily substitutable. In the short term, established exporters have some protection from the competence and relationships that they have built up over time, including knowledge of production and post-harvest processes; investments in specialised facilities; and relationships based on trust and reciprocity with overseas customers. These capabilities decrease their vulnerability to substitution within the supply chain, either from within Europe or from another external supply source. In the long term, however, expanding product range and the services offered appears to be the most secure path to long-term viability and the maintenance of sufficient margins. Product differentiation may involve greater skill in production, post-harvest care, and logistics, greater capital investment, and/or greater innovation capabilities. This requires strategic thinking, networking, and changing the orientation of export activities to new markets with different demands. Put simply, the African exporter cannot afford to stand still. Their competitiveness, and the ultimate developmental potential of the sector, depends upon it.

V. CONCLUSIONS

This study has analysed the fresh vegetables trade between the United Kingdom and Kenya and Zimbabwe from the global commodity chains perspective. Global commodity chains do not consist merely of flows of materials across national boundaries. They consist of networks whose key decision-makers influence the outputs of the chain and its composition. The paper has paid particular attention to the governance of the chain, identifying the key decision-makers and how their requirements for the

performance of the chain were translated into structure and practice. In particular, it has highlighted the role played by large retailers in defining the outputs and structure of the chain and the impact of supermarket requirements on exporters and producers in Kenya and Zimbabwe.

As well as demonstrating the relevance of the commodity chain concept, developed originally for the analysis of manufacturing, for understanding international trade in fresh vegetables, the paper has refined the concept of governance, distinguishing between different areas in which the buyer exercises control and the different forms through which this control is exerted. It has also highlighted the fact that durable relationships between companies involving intense information flows and co-ordination of activities can still be characterised by insecurity. While chains that are tightly governed are frequently described by terms such as 'commitment', 'long-term relationships' and 'co-operation' [Loader, 1997: 24], suppliers still experience competitive pressures and the threat of substitution.

The commodity chain approach provides insights that are important for the development of non-traditional agricultural exports in sub-Saharan Africa. The paper demonstrates that success in the fresh vegetables chain depends on meeting (and exceeding) the exacting requirements of major customers in export markets, and that there is little scope for exporters who lack the investment capabilities to ensure a consistent, quality product that complies with regulatory requirements to participate in the market. At the same time, even the largest African exporters must maintain close links to UK importers. Policies aimed at promoting non-traditional agricultural production must focus not only on the growers, but also on the exporters and on marketing channels.

The commodity chain approach was adopted for the analysis of the fresh vegetables sector precisely because of its focus on linkages across national boundaries and the role of large retailers in international trade. However, this approach leaves certain questions unanswered. First, the focus on the dominant marketing channels for fresh vegetables from Kenya and Zimbabwe means that no attempt has been made to see if alternative actual or potential markets and marketing channels might exist for smaller and medium sized exporters. Secondly, while the findings reinforce work on export linkages in labour-intensive manufacturing sectors, such as garments and shoes, three questions remain about their applicability to agriculture:

- (1) They certainly appear relevant to situations where safety, product differentiation, value-added and innovation are important. For example, work on fruit exports from Brazil highlight similar pressures facing exporters [Damiani, 1999; Gomes, 1999]. However, it is important to recognise that many agricultural exports do not have these

characteristics. Raikes and Gibbon [2000], for example, show that the global supply of Africa's primary commodities (cotton, cocoa, cotton, and tea) is generally a lower grade crop with a low value-to-weight ratio. These commodities tend to be exported in unprocessed form, and where processing is done locally it is limited to rudimentary activities such as drying, milling or hulling. Rather than adding value, these processes merely prepare commodities for international transport. Non-production value added activities remain located outside Africa, denying producers access to activities with higher margins and the opportunity to acquire new competences. The potential for upgrading in this situation is extremely limited.

- (2) The extent of product differentiation and post-harvest processing is not determined solely by the nature of the crop, however. The rapid transformation of the fresh vegetables market in the UK makes this clear. The process was driven by oligopolistic competition in the UK supermarket sector in the 1990s, which favoured product differentiation strategies. With market penetration in the fresh vegetables sector reaching its limit, and with price-cutting price strategies becoming more evident in the supermarket business, the dynamics of the fresh vegetable chain might change. On the one hand, a renewed emphasis on low-cost sources of supply might marginalise countries with relatively expensive airfreight costs. On the other hand, a more radical shift of processing towards the producer countries might reinforce current tendencies.
- (3) Different food products are marketed through different marketing channels. For example, coffee tends to be controlled by roasters whereas bananas, tea and sugar tend to be controlled by vertically integrated multinationals, which are both producers and branders [Raikes and Gibbon, 2000]. In some cases, supply chains are tightly controlled, and in others they are not. Some of the factors lying behind this differentiation in the horticultural sector were discussed in section II. Among Africa's primary commodities, buyer/supplier relationships are less institutionalised than in the horticultural sector. In fact, it appears to be the case that transactional dependence is relatively low, with investment in and commitment to, suppliers extremely rare [Gibbon, 2000]. For these commodities, it is more common for international trading houses rather than retailers to be the key agents in chain co-ordination.²³ In such cases, the buyer-driven GCC model may well not apply [Raikes and Gibbon, 2000]. Further work is required in order to understand how governance relationships change over time and their implications for agrarian development in Africa.

NOTES

1. This data is taken from Eurostat [1998] and refer to HS 0708, 'leguminous vegetables, shelled or unshelled, fresh or chilled' and HS 0709, 'other vegetables, fresh or chilled', which includes artichokes, asparagus, mushrooms, sweet peppers, capsicums, etc.
2. Gereffi [1999: 52] defines four types of upgrading, but the two of most interest to this paper are the shift to the production of more sophisticated products and the acquisition of new functions, such as packaging, quality control, logistics, design, etc.
3. These ideas about governance have been developed jointly with Hubert Schmitz and are discussed more extensively in Humphrey and Schmitz [1999].
4. One clear example of this is the UK government's policy of 'naming and shaming' retailers that sell fresh food with excessive pesticide residues. It is the retailer's reputation which is on the line should pesticide be applied incorrectly when the product is grown.
5. The interesting question is not why markets fail in these situations, but why buyers do not respond to these challenges through vertical integration.
6. Doel [1996] describes how Marks & Spencer created the chilled, ready meals sector in the UK, developing products and creating a whole new supply industry.
7. The limits to this strategy will be discussed in section V below.
8. Examples of speciality vegetables are shown in Table 1 below.
9. A very similar discussion of governance in commodity chains and its elements can be found in Kaplinsky [2000].
10. For example, Marks & Spencer emphasises quality, and offered all of the products listed in Table 1 in trays. Supermarkets emphasising quality and value-for-money would use more cellophane packets.
11. For the distinction between half-channel and entire-channel networks in agricultural trade, see van der Laan [1993: 181–2].
12. A recent NRI report [2000] has shown that communication of the EU legislative position regarding Maximum Residue Limits (MRLs) has been poor and even the largest exporters are finding it difficult to obtain accurate information to respond to legislative requirements.
13. This is similar to the Assured Produce Scheme in the UK, which mandates that all UK suppliers adopt the uniform protocols regarding food safety, employee health and safety, and environmental protection.
14. See Barrett *et al.* [1997], Jaffee [1995], Malter *et al.* [1999], Thoen *et al.* [forthcoming], and Dixie [1999].
15. Dijkstra's [1997] work on horticultural marketing channels in Kenya identifies weak infrastructure as a primary constraint on the performance of domestic horticulture.
16. These cases were described by the firms concerned at workshop in London organised in February 1999 by Institute of Development Studies and the Natural Resources Institute under the sponsorship of DFID. This explored the scope for smallholder supply to UK supermarkets and presented two examples of exporters in Kenya and Zimbabwe who were sourcing part of their produce from smallholders while meeting supermarket quality and safety requirements.
17. For example, the UK government is committed to 'naming and shaming' retailers whose fresh food products display excessive pesticide residues. One consequence of this may be to reduce the availability of 'exotic' fruits whose volumes do not justify complex monitoring arrangements.
18. The acreage of horticultural export farms in Zimbabwe ranges from between 3,000–8,000 acres, although substantial portions are allocated to tobacco or left fallow.
19. Contracts with large growers specify the quantity, quality and price of produce.
20. While the shift to large-scale commercial farming in horticulture has generated significant employment for African countries, the potential for poverty reduction is less clear. In both Kenya and Zimbabwe, the industry is heavily reliant on temporary, casual, and seasonal workers, who are mainly female and not afforded protection under national legal frameworks. In addition, unlike the cut flower industry, the fresh vegetable industry has not

- stimulated businesses and services in the areas near farms. This is largely due to the geographic dispersion of plantations and packhouses, coupled with the smaller size of the industry.
21. It should be noted, however, that this type of argument was used for many years to justify vertical integration in manufacturing industry, but the present trend is to increased outsourcing.
 22. See Raikes and Gibbon [2000] for a discussion of Zimbabwe's large-scale, commercial farming (LSCF) sector and the transition from high-input, mechanised traditional crops to export horticulture.
 23. In the global coffee chain, for example, retailers have lost power due to their declining role in final consumption [Raikes and Gibbon, 2000].

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