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Growth in high-value export markets in Sub-Saharan Africa and its development implications

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Abstract

During the past decades the global food system changed dramatically with increased trade in high-value food products, increased exports from developing countries, increased consolidation and dominance of large multinational food companies, and increased proliferation of public and private food standards. As a consequence, global food trade is increasingly organised around vertically coordinated supply chains rather than around spot market transactions. While there is consensus that these structural changes are profoundly changing the way food is produced and traded, there is no consensus on the overall welfare implications of increased high-value food exports and supply chain restructuring in poor countries. In this paper we discuss the income and poverty implications of expanded horticulture exports and changing supply chain structures for rural households in Sub-Saharan African exporting countries. We put together the economic arguments; distinguish different channels through which rural households are affected; provide evidence from three comparative case-studies on high-value horticulture exports; and derive implications for policy makers, private investors, and the development aid community.

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1. Introduction

During the past couple of decades the integration of poor countries in global agricultural markets accelerated with increased food exports originating from developing countries. At the same time, there have been important structural changes in global agri-food markets. The structure of world food trade, and especially of developing countries' exports, has changed dramatically with traditional tropical export products (such as coffee, cocoa, and tea) loosing importance and non-traditional high-value commodities (such as horticulture and seafood products) gaining importance. In addition, food trade is increasingly consolidated with large multinational food companies (such as retail chains and processing companies) increasingly dominating global agri-food chains. Moreover, food standards (including for example food quality and safety standards) have been increasing very sharply and global agri-food trade is increasingly regulated through public as well as private standards.

These structural changes have had important effects on the agri-food systems of developing countries, especially in dynamic high-value exports sectors such as horticulture. High food standards and foreign investments in developing countries' food sectors have induced increasing levels of vertical coordination in the food chains of these countries, with important implications for smallholder farmers and rural households.

While there is consensus that the structural changes in global food supply chains are profoundly changing the way food is produced and traded in developing countries, there is no consensus on the overall welfare implications of these changes. Integration of developing countries in global markets is generally believed to stimulate economic growth in these countries but there is much less consensus on the impact of trade on income inequality and

poverty (Dollar and Kraay, 2002 & 2004; Winters et al., 2004). There are different views on the effects of increased agri-food exports in terms of local-level development, rural income mobility and poverty reduction. On the one hand, stimulating agri-food exports, especially high-value exports, has been promoted as a pro-poor development strategy because of the direct link the sector has with the rural economy (e.g. Aksoy and Beghin, 2005; Anderson and Martin, 2005; Carter et al., 1996; World Bank, 2008). On the other hand increased globalization and the structural changes in global agri-food chains have been argued to be detrimental for global poverty reduction. The main concern is that because of increasing public and private food standards, increasing consolidation in global food markets and foreign direct investment (FDI) in the agri-food sectors of developing countries, smallholder farmers become increasingly marginalized in high-value export chains, either because they are excluded as primary producers in the chains or because they are exploited by large, often multinational, food companies (e.g. Weatherspoon et al., 2003; McCulloch and Ota, 2002; Dolan and Humphrey, 2000; Key and Runsten, 1999; Farina et al., 2005; Farina and Reardon, 2000; Reardon et al., 1999). The arguments are subject to debate and also empirical studies – including case-studies from different Sub-Saharan African countries – have come to diverse conclusions about the effects of increased agri-food trade and structural changes in global agri-food markets on rural incomes and poverty.

In this paper we put together the arguments and empirical case-study evidence on how developing countries' food systems have altered in response to the recent structural changes in global agri-food markets and what the implications have been for rural incomes and rural poverty reduction. The paper is structured as follows. In a next section we briefly discuss the recent structural changes that have been taking place in global agri-food markets. In section three we analyse in particular the developments in Sub-Saharan African export markets and discuss the implications for the governance structure of food supply chains. In section four,

we discuss the channels through which local households benefit from recent expansions in export markets and put together empirical case-study evidence that quantifies some of the effects. In a final section we draw some conclusions and discuss the implications of the findings in this paper for private investment priorities, donor strategies and government policies.

2. Structural changes in global agri-food markets

During the past couple of decades global food and agricultural markets have experienced rapid structural changes. First, the structure of agri-food trade has changed significantly over the past couple of decades with non-traditional, high-value exports gaining importance and traditional tropical export products loosing importance. Second, food multinationals increasingly dominate international food chains. Third, food standard increased sharply since the mid 1990s. Fourth, these changes have had important implications for the way global food supply chains are governed. In this section we consecutively discuss each of these recent structural changes in global food markets.

Changing structure of world agri-food trade

World trade in food and agricultural products is increasing and has more than tripled during the past two decades; from 220 billion US \$ in 1985 to 720 billion US \$ in 2005 (figure 1). Exports of high-value products – defined here as including fruits, vegetables, fish, seafood, meat and dairy products with a relatively high per unit or per weight value as compared to more bulky primary commodities such as cereals, coffee and cocoa – have been increasing even more rapidly; their importance in total global agri-food exports increased with 10% points from 34% in 1985 to 44% in 2005.

[Include figure 1 about here]

This shift towards high-value agricultural exports has been most dramatic in developing countries where they increased more than fivefold over the period 1985-2005 (figure 2). The share of high-value commodities in total developing countries' agri-food exports increased from 23% in 1985 to 40% in 2005. This has been accompanied with a significant loss in importance of traditional tropical exports – defined here as including coffee, cocoa, tea, sugar, cotton, nuts and spices – for which the share in total exports decreased from 41% in 1985 to 18% in 2005. High-value commodities actually constitute the main component of developing countries' agri-food exports.

[Include figure 2 about here]

The shift from traditional tropical exports to non-traditional, high-value exports is apparent in all developing regions but there are some slight differences across the regions. In Latin-America and developing Asia high-value products have become the main export sector, constituting respectively 43% and 38% of total food exports in these regions (figure 3). In Sub-Saharan Africa, the importance of high-value exports is slightly lower, constituting 30% of total exports, and traditional tropical exports still constitute the largest part of SSA agri-food exports but the shift in the past decades has been most dramatic here. The importance of traditional tropical exports in total agri-food exports has decreased from 68% in 1985 to 46% in 2005 while the share of high-value exports more than doubled, from 14% in 1985 to 30.4% in 2005 (figure 4). These are important changes for a region where many countries have for decades been heavily dependent on one or just a few export commodities.

[Include figure 3 about here]

[Include figure 4 about here]

Increased consolidation in food processing and retail

In the past decades global food supply chains have become increasingly concentrated with large food companies and multinational firms dominating the chains. This is most

apparent at the level of food retail. The so-called ‘supermarket revolution’ first emerged in industrial countries where the food distribution sector is becoming increasingly concentrated around a few large super- and hypermarket chains. For example in European countries the five-firm concentration ratio in food retail is particularly high, above 60% in many countries, reflecting the dominance of large retail chains (figure 5).

[Include figure 5 about here]

More recently, this supermarket revolution also set off in developing countries. Supermarkets have spread rapidly in most of Latin America, East and Southeast Asia and are starting to emerge in Sub-Saharan Africa and South Asia (Gulati et al., 2005; Reardon and Berdegué, 2002; Reardon et al., 2003; Weatherspoon and Reardon, 2003). For example, among Latin-American countries, the share of food retailed through supermarkets has been estimated to range from 35% to 75% (Reardon and Berdegué, 2002). Also in Africa supermarkets have started to emerge and initially a rapid spread throughout Africa was expected (Weatherspoon and Reardon, 2003). However, more recent studies show that the supermarket revolution in Africa is much slower than anticipated in earlier studies and that traditional wet markets will remain dominant in food retail in Africa for many years to come (Humphrey, 2006; Minten, 2008; Tshirley, 2004 & 2009; Traill, 2006).

Also in food processing consolidation is taking place. For example, in the case of coffee the share of the five largest processors rose from 21 % to 58 % between 1995 and 1998, and three multinational trading companies dominate the trading stage. In the case of cocoa, the number of grinders in Europe fell from about 40 in the 1990s to 9 in 2000, and the three largest grinders account for over 50 % of the market, with even higher levels of concentration in chocolate manufacturing (UNCTAD, 2005).

Increasing food standards

During the past decade food standards, including public regulations as well as private corporate standards, have increased sharply. Fresh food exports to the EU for example have to satisfy a series of stringent public requirements; including marketing standards, labelling requirements, conditions concerning contamination in food, general hygiene rules and traceability requirements. Also private standards, established by large food companies, supermarkets chains and NGOs, play an increasingly important role in agri-food trade (Jaffee and Henson, 2005). Such standards increasingly go beyond food quality and safety specifications and include ethical and environmental concerns as well. Although private standards are legally not mandatory they have become de facto mandatory as a large share of buyers in international food markets are requiring compliance with such standards, for example GlobalGAP standards (Henson and Humphrey, 2008).

A number of factors contribute to explaining the increased importance of standards in global food trade. A series of major food safety hazards in high-income countries has increased consumer and public concern on food-borne health risks and created an increased demand of food safety. In addition, rising income levels and changing dietary habits have increased the demand for high quality food. Consumers are also increasingly (made) aware of ethical and environmental aspects related to food production and trade, which has increased the need for specific standards related to these aspects. But also the increased trade in fresh food products such as fruits, vegetables, fish, and meat - which are prone to food safety risks and subject to specific quality demands by consumers - have increased the need to regulate trade through standards. In addition, the increased dominance of supermarkets in food chains also contributes to explaining the increased importance of food standards. Large retail chains put much emphasis on freshness, product quality and food safety as a product differentiation

strategy or as to reduce food safety risks and the costs related to risk of selling unsafe food (Henson and Humphrey, 2008).

Governance of global food supply chains

Global food supply chains are increasingly dominated by large multinational food companies while trade is increasingly regulated through standards set by these private companies or by national, regional and international authorities. This has lead to changes in the structure and organisation of global food supply chains. Rather than being based on spot market transactions high-standards food supply chains entail varying levels of vertical coordination at different nodes in the chains. This is apparent in vertical relationships between supermarkets and their specialized suppliers or food importers. In addition, the changing governance systems in global supply chains result in increased vertical coordination between developing country producers on the one hand and exporters, food processors and supermarkets in these countries on the other hand. This is most apparent in the form of contract-farming between agro-industrial firms and local primary producers. In the most extreme case primary production is completely vertically integrated in upstream processing and trading activities.

As we will document in the next sections, the governance system in global food supply chains is crucial in understanding the local welfare implications of increasing high-value and high-standards agri-food exports in developing countries.

3. High-value export markets in Sub-Saharan Africa

Horticulture exports

Exports of high-value and high-standards agricultural produce has been growing rapidly in many developing countries over the past two decades. Especially horticulture

products are playing a dominant role in this (Weinberger and Lumpkin, 2005). Also in Sub-Saharan Africa (SSA), the region most lagging in integration in international markets, horticulture exports to high-income regions has almost tripled during the past 15 years; from less than 2 million ton in 1990 to 6 million ton in 2005 (FAOstat, 2008). From the early 1990s onwards horticulture exports from SSA grew sharply and continuously while the export growth of other, more traditional agricultural commodities; such as coffee, sugar and cotton; was much smaller and less persistent (figure 6). Several SSA countries; including very poor countries such as Ethiopia, Burkina Faso, Cameroon, Kenya, Uganda and Senegal; have become important suppliers of fresh fruits and vegetables to EU markets.

[Include figure 6 about here]

Public and private food standards have often been mentioned to act as barriers for developing countries' food exports but it is remarkable that many poor SSA countries experienced accelerated growth in fresh produce exports, mostly to the EU, exactly during a period of sharply increased EU food quality and safety standards. Especially private standards for horticulture products have been increasing sharply. Some private standard-setting bodies and certification schemes have initially focussed on fruits and vegetables; for example the EurepGAP standards set by a group of European retailers.

Supply chain governance

The growth in high-value agri-food exports from SSA countries has been associated with the spread of so-called modern supply chains in these countries. This modernization in SSA horticulture sectors entails important shifts in production and trade. High-value horticulture supply chains differ substantially from traditional marketing channels in SSA countries. While traditional marketing channels are based on spot market transaction and often involve a large number of buyers and sellers, the high-value horticulture supply chains

are largely based on vertical coordination and contract-farming, or on complete ownership integration in the most extreme cases. This is important for understanding the overall welfare implications of increased high-value trade and increasing food standards.

4. Development impacts

The recent boom in African – and other developing regions’ – horticulture exports has brought about a broad dispute among academics, policy-makers and the development aid community on the overall welfare impact. Especially in SSA, the region most lagging in poverty reduction, the welfare implications of high-value horticulture trade are a pertinent issue. On the one hand, it is recognized that horticulture products entail an important potential for raising rural incomes and reducing poverty because of their high intrinsic value and labor-intensive production systems (Aksoy and Beghin, 2005; Anderson and Martin, 2005; World Bank, 2008). Many SSA countries therefore pursue the development of horticulture export supply chains as a specific poverty reduction strategy. Also the World Bank and other international donors have invested heavily in increasing SSA countries’ capacity in horticulture exports based on the belief that this would contribute to poverty reduction.

On the other hand, developing country horticulture exports have been contemplated to exacerbate existing inequalities while failing to create direct gains for the rural poor. This would be the case because smallholders, and especially the poorest farmers, are either excluded from these high-value supply chains or exploited by large multinational companies (Dolan and Humphrey, 2000; Reardon et al., 1999). Increasing standards are said to result in increased smallholder exclusion from profitable export opportunities because they face financial and other constraints to comply with increasing standards. Also vertical coordination and contract-farming would lead to the exclusion of the poorest households because food companies reduce transaction costs and prefer to contract with relatively larger

farms. In addition, increased consolidation in food supply chains and the increased power of large supermarket chains and multinational food companies would lead to the exploitation of poor farmers who face unequal bargaining power vis-à-vis these companies.

Empirical studies concerning the welfare implications of increasing standards and high-value agri-food trade have come to diverse conclusions (Swinnen, 2007). Some studies have shown positive effects including increased rural incomes and reduced poverty rates (Maertens and Swinnen, 2009; Minten et al., 2007). Other studies have documented lower product prices (Neilson, 2008) and the increased exclusions of smallholders with negative effects on rural incomes (Danielou and Ravry, 2005; Minot and Ngigi, 2004).

To draw general conclusions on the overall welfare implications of the growth in high-value exports, the increase in food standards and the restructuring of food supply chains for rural household in developing countries it is necessary to distinguish between different types of effects. In fact the growth in high-value export supply chains has affected rural households in developing countries in two direct ways: through product markets and through labor markets. We discuss these effects in turn.

Product market effects

Local farm-households are affected by high-value export growth and the emergence of high-standards supply chains through product markets; more specifically through the production and marketing of high-value produce in contract-farming schemes. There are efficiency and distributional consequences related to these product market effects.

First, the welfare implications of high-value contract-farming schemes depend on whether farmers engaged in these schemes benefit from this. Contract-farming schemes in high-value supply chains usually entail the provision of inputs, credit and farm assistance to farmers by the contractor company. This enhanced access to inputs and credit results in

reduced production and marketing risks, improved technology and productivity, and ultimately higher incomes for farmers; which has been empirically demonstrated by various authors (Birthal et al., 2005; Gulati et al., 2007; Minten et al., 2006).

Second, the implications in terms of poverty reduction and rural inequality critically depend on the distributional consequences of contract-farming schemes and the inclusion of the poorest farmers. If the poorest farmers are increasingly excluded from high-value supply chains because of increasing standards and increased vertical integration, then rural inequalities might be aggravated. Many authors argue that this is indeed the case and that companies prefer to contract with larger suppliers because of high transactions costs, the inability of smallholders to produce consistent and large volumes, the constraints smallholders face in complying with increasing standards, etc.

The extent of smallholder exclusion from high-value supply chains is a contentious issue and mainly an empirical question. In horticulture supply chains in SSA countries there is a wide variation in the share of produce that is procured from smallholders. For example the pineapple and banana sectors in Cote d'Ivoire, the vegetable sector in Ghana and Madagascar and the fruit sector in Kenya are largely based on smallholder contract-farming while other sectors rely on procurement from large commercial farms or own integrated estate production (table 1). Some studies have documented that the share of smallholder contract-farming in high-value horticultures supply chains in SSA is decreasing as a result of increasing standards (Dolan and Humphrey, 2000; Danielou and Ravry, 2005). Other studies have shown that among the smallholders it is mainly famers with more land and non-land assets that are involved in high-value contract-farming while the poorest are excluded (Legge et al., 2006; Maertens and Swinnen, 2008; McCulloch and Ota, 2002; Minot and Ngigi, 2004).

[Include table 1 about here]

However, the effects of smallholder exclusion in high-standards horticulture supply chains cannot be interpreted without considering the second mechanisms through which rural households are affected; this is through labor markets.

Labor market effects

A second mechanism through which rural households are affected by increasing high-value exports is through labor markets. The growth in high-value agri-food exports has been associated with increased employment in agro-industrial firms. Where high-value export supply chains have moved from being based on smallholder contract-farming towards agro-industrial estate production, additional employment has been created on the fields of these companies. Moreover, employment has been created in post-harvest processing and handling of high-value produce as increasing requirements for sorting, grading, washing and labeling etc. incorporated in public regulations and private standards increased the need for labor intensive post-harvesting.

We document the importance of these labor markets effects in the case of SSA horticulture exports in table 2, showing figures on the number of employees in horticulture agro-industries in several subsectors and countries. The figures show that in many poor SSA countries, thousands of people are employed in the horticulture agro-industry. Part of this employment might concern urban jobs in processing units and pack houses but the lion's share is rural employment. Moreover, a major share of the thousands of employees in the SSA horticulture agro-industry is female.

These employment and labor market effects have received less attention in the empirical literature. Only a handful of studies have actually taken into account labor market effects in the analysis of the welfare implications of high-value export expansion in developing countries. For example, Mc Culloch and Ota (2002) show that employment in the

Kenyan horticulture export industry is especially important for the poor. Barron and Rello (2000) find that the tomato agro-industry in Mexico provides jobs for the rural poor, thereby contributing to rising rural incomes in poverty struck regions of the country. Weinberger and Lumpkin (2005) discuss the potential of horticulture production for poverty reduction, including effects that come through the creation of employment in these sectors. Also, our own case-studies from Senegal, which are discussed in detail below, show the importance of labor market effects.

Comparative case-studies

In the remainder of this section we analyse and compare the insights from three original case-studies on high-value horticulture exports in SSA countries: the vegetable export sector in Madagascar (from Minten et al., 2008); the bean export sector in Senegal (from Maertens and Swinnen, 2009 and Maertens, 2009); and the tomato export sector in Senegal (from Maertens et al., 2008). The combination of these case-studies is particularly relevant because the three studies document the diversity in supply chain responses to increasing standards and the resulting varying levels of vertical coordination in the chains. The governance structure in the supply chains further determines the way rural households benefit from increased exports.

First, the vegetable export sector in Madagascar is dominated by one domestic exporting company that relies 100% on smallholder contracting for procurement of primary produce. In response to increasing standards in overseas markets the company has intensified its contract-farming schemes with smallholders. This has lead to a vertical coordination scheme including almost 10,000 smallholders, often very small farms with less than 1 ha, in the hillsides of Madagascar. The company relies on an intensive on-farm monitoring system including 300 company agents who regularly visits the contracted farms to provide extension services and technical advice, to monitor adherence to contractual agreements and to avoid

side-selling. Moreover, inputs are supplied on credit by the company at the beginning of the growing season.

Second, in the Senegalese bean export sector increasing standards have induced a shift from smallholder contract-farming towards vertically integrated estate production by the exporting companies. It is estimated that smallholder procurement decreased from 95% in 1999 to 52% in 2005. Especially the largest companies changed their procurement system and started their own integrated estate farms as part of a strategy to become EurepGAP certified.

Third, the Senegalese tomato export sector is dominated by one multinational company who was established and started exporting tomatoes from Senegal to the EU in 2003. The export supply chain is completely vertically integrated. Smallholder procurement is 0% and production, processing, trade and distribution is completely integrated within the subsidiaries of the multinational companies.

Despite the differences in supply chain structure and governance across the sectors, the results of the case-studies show that in all three cases there have been positive welfare effects. Yet, the channel through which households benefit differs across the sectors: product market effects are important in the vegetable sector in Madagascar where 100% of the produce is supplied by smallholders on a contract basis; labour market effects are important in the tomato sector in Senegal where the chain is completely integrated with no procurement from smallholders; and both effects are important in the bean sector in Senegal where there is a mixed strategy of procurement from contracted smallholders and integrated estate farming.

First, in the case of vegetable exports in Madagascar rural household benefit substantially from contract-farming with the export industry. The vegetables produced under contract contribute for 47% to total household income. In addition, through technological spill-over effects from vegetable contract-farming rice productivity increased with 64%. The

overall result is an increase in rural incomes, an increase in the stability of rural incomes and a reduction in poverty; which is reflected in a reduced ‘hungry’-season for household engaged in vegetable contract-farming with the export industry (figure 4).

[Figure 4 about here]

Second, the shift from smallholder contract-farming towards integrated estate farming observed in the bean export sector in Senegal has also shifted the way local households benefit: increasingly through agro-industrial employment and labour market effects rather than through contract-farming and product market effects. Although both effects result in significantly higher incomes (figure 5), the shift in supply chain governance has resulted in a stronger poverty-alleviating effect of high-value horticulture exports (figure 6). The case-study results show that the poorest households mainly benefit through agro-industrial employment while contract-farming is biased towards relatively better-off households with more land and non-land assets. Agro-industrial employment is found to benefit rural households directly through increased income from wages and indirectly because these wages are partially invested in the households’ own farm business, leading to higher outputs and farm incomes.

[Figure 5 & 6 about here]

Third, in the tomato export sector in Senegal rural households only benefited through labour market effects as there is zero procurement from smallholder farms. This case-study also shows that it is mainly the poorest households who benefit from the labour market effects of increased high-value horticulture exports. Households employed in the tomato export industry, either on the fields or in the processing units of the company, have incomes that are more than double the income of other households in the region while they initially, before the multinational company started the investments in tomato exports in 2003, had lower land and non-land asset holdings (figure 7). Increased tomato exports have resulted in

increased employment, increased incomes and ultimately reduced rates of poverty and extreme poverty (figure 8).

[Figure 7 & 8 about here]

5. Conclusion and implications

The main conclusion of this paper is that increased high-value trade can bring about important positive effects for rural development and poverty reduction. Even with stringent standards, and consolidation and vertical coordination in supply chains, positive welfare implications can be found. Part of these effects comes through product markets but also employment and labour market effects are important, particularly for the poorest rural households. This implies that strategies to improve the welfare effects of high-value trade need to include strategies for creating inclusive food supply chains from which smallholders are not completely excluded as well as strategies for the development and improved performance of rural labour markets.

There is a need to recognize the importance of private investment in agri-food supply chains, supply chain development and vertical coordination in agri-food chains and for integrating these developments into policy thinking and program strategies. To stimulate the development of modern supply chains, to guarantee the participation of small farmers in the chain and to assure an equitable distribution of rents in the chain, it is crucial to enable and encourage vertical coordination. In this respect some specific policy issues can be identified. First, enabling and stimulating supply chain development and modernization of agri-food supply systems entails institutional changes to stimulate innovative vertical coordination schemes and set the right juridical systems and supporting contract-enforcement mechanisms. Second, probably one of the most essential elements for the integration in, and the development of high-value food supply chains and vertical coordination in those chains, is to encourage private investment – domestic as well as foreign investment – in the agro-food

industry through creating the right conditions for investment. Third, this involves ensuring macro-economic stability, attracting FDI in the agro-industry, etc. In addition, enhancing efficiency and equity in high-value agricultural supply chains is a key point. Participation of poor farmers in the chains and an equitable distribution of the rents in the chains requires several key elements. There is need for policies to focus on reducing transaction costs through e.g. investment in intermediary institutions, investment in infrastructure, investment in farmers' associations, etc. Better empowerment of farmers can also improve their bargaining position in vertically coordinated food supply chains.

The insights from this paper that the poorest household tend to benefit from export market development through labour markets rather than through product markets implies pro-poor export development strategies to pay attention to labour market and employment conditions as well. These insights have largely been ignored and the analogy with insights from the Green Revolution of the 1960s could be drawn. The Green Revolution triggered major productivity growth and rural income rises in South-East Asian countries but was at first believed to benefit richer farmers while marginalizing poorer farmers because of the specific constraints they face in accessing and using Green Revolution inputs. However, David and Otsuka (1994) showed that poorer households did benefit from this technology-driven agricultural development because of labor market effects. The insights from this paper suggest that the same might hold for standards-driven (or supply chain-driven) agricultural development. At the same time, Carter et al. (1996) has argued for exports from Latin America, that poverty effects might strongly depend on the nature of the commodities, with poverty-reducing benefits more likely in labor-intensive than in land-intensive production systems. Horticulture is generally a labor-intensive sector and the findings discussed in this paper validate the argument that labor-intensive export sectors strongly benefit poverty alleviation.

In this paper we have presented evidence from specific case-studies related to success stories of high-value export market development in SSA. However we need to mention that there is a large variation between countries in both the integration in high-value international food markets and the progress of structural supply changes and modernization of food supply systems. Participation in high-value agri-food trade can be an engine of pro-poor growth for developing countries but many countries face challenges in bringing about such export growth. Yet, international competition is moving beyond the capacity of supplying products at market prices. Agricultural products have to comply with food quality and safety requirements while many developing countries have substantial weaknesses in food safety capacity. Increasing the supply capacity for high quality and safe fresh food and creating the capacity to respond quickly to emerging food safety issues, changing legislation and a variety of private standards requires attention to key issues such as improvement in the administrative, technical and scientific capacity for food safety; public-private sector cooperation; farm and business assistance programs; attracting foreign direct investment; demonstrate capacity for producing high-standard food through labelling and certification.

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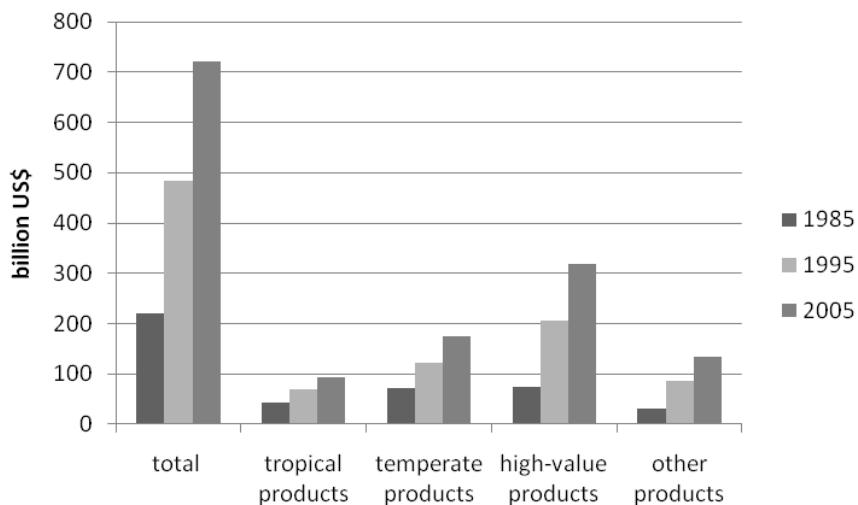
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Figures

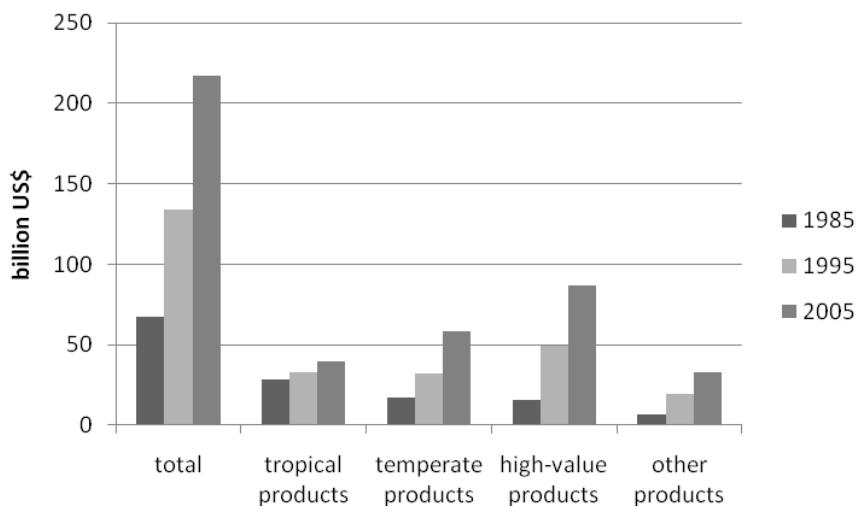
Figure 1: Changes in world agri-food exports, 1985 - 2005



Source: calculations based on FAOstat statistics

Tropical products include coffee, cocoa, tea, nuts and spices, textile fibres, sugar and confectionary; temperate products include cereals, animal feed and edible oils; high-value products include fruits, vegetables, fish, seafood, meat and meat products, milk and dairy products; other products include tobacco and cigarettes, beverages, rubber, and other processed food products.

Figure 2: Changes in developing countries'¹ agri-food exports, 1985 - 2005

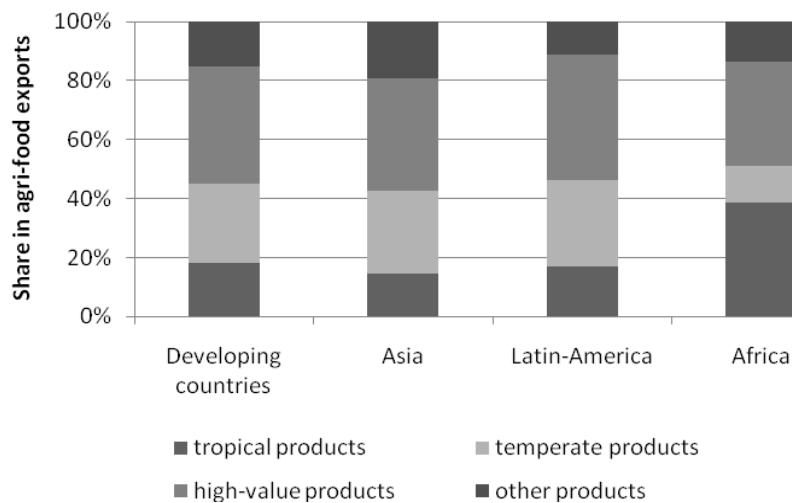


Source: calculations based on FAOstat statistics

Tropical products include coffee, cocoa, tea, nuts and spices, textile fibres, sugar and confectionary; temperate products include cereals, animal feed and edible oils; high-value products include fruits, vegetables, fish, seafood, meat and meat products, milk and dairy products; other products include tobacco and cigarettes, beverages, rubber, and other processed food products.

¹ Developing countries include all low- and middle-income countries in Africa, Central-America, South-America and the Caribbean; East Asia, South Asia, Southeast Asia and Central Asia.

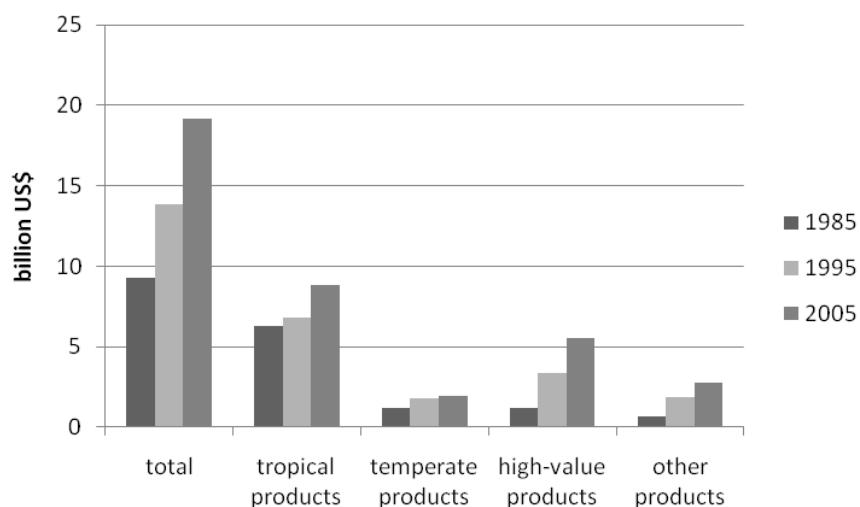
Figure 3: The structure of agri-food exports for different developing regions, 2005



Source: calculations based on FAOstat statistics

Tropical products include coffee, cocoa, tea, nuts and spices, textile fibres, sugar and confectionary; temperate products include cereals, animal feed and edible oils; high-value products include fruits, vegetables, fish, seafood, meat and meat products, milk and dairy products; other products include tobacco and cigarettes, beverages, rubber, and other processed food products.

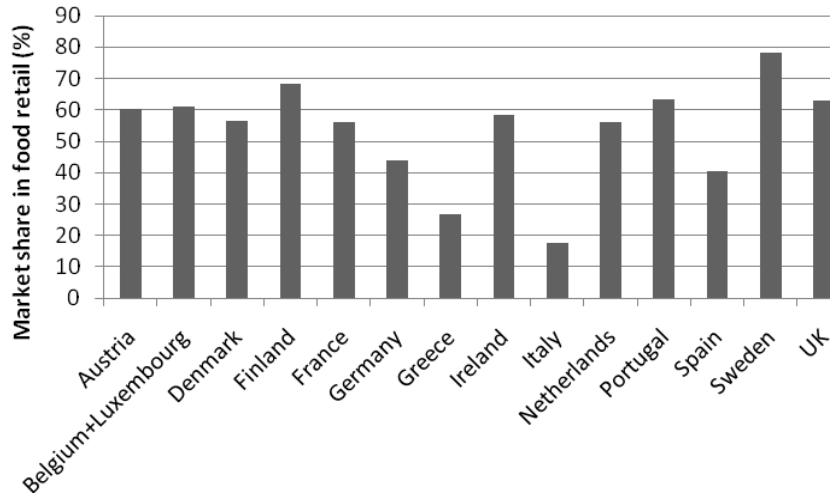
Figure 4: Changes in Sub-Saharan African agri-food exports, 1985 - 2005



Source: calculations based on FAOstat statistics

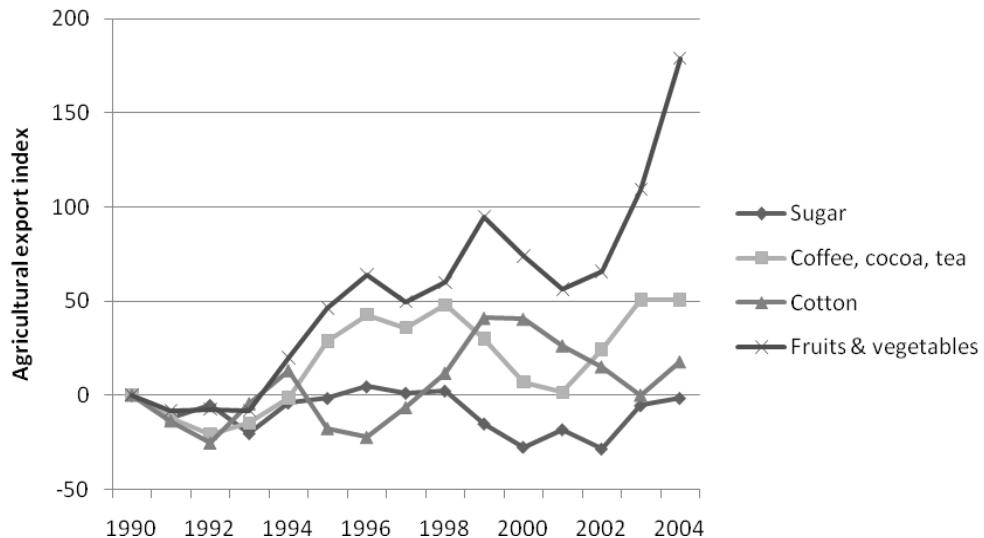
Tropical products include coffee, cocoa, tea, nuts and spices, textile fibres, sugar and confectionary; temperate products include cereals, animal feed and edible oils; high-value products include fruits, vegetables, fish, seafood, meat and meat products, milk and dairy products; other products include tobacco and cigarettes, beverages, rubber, and other processed food products.

Figure 5: The five-firm concentration ratio in food retails in selected EU countries, 1999



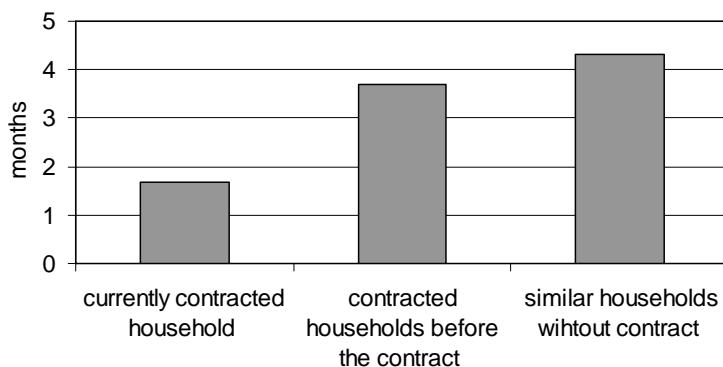
Source: Dobson, 2003 cited in Henson, 2006

Figure 6: Index of agricultural exports from Sub-Saharan Africa, 1990 – 2005



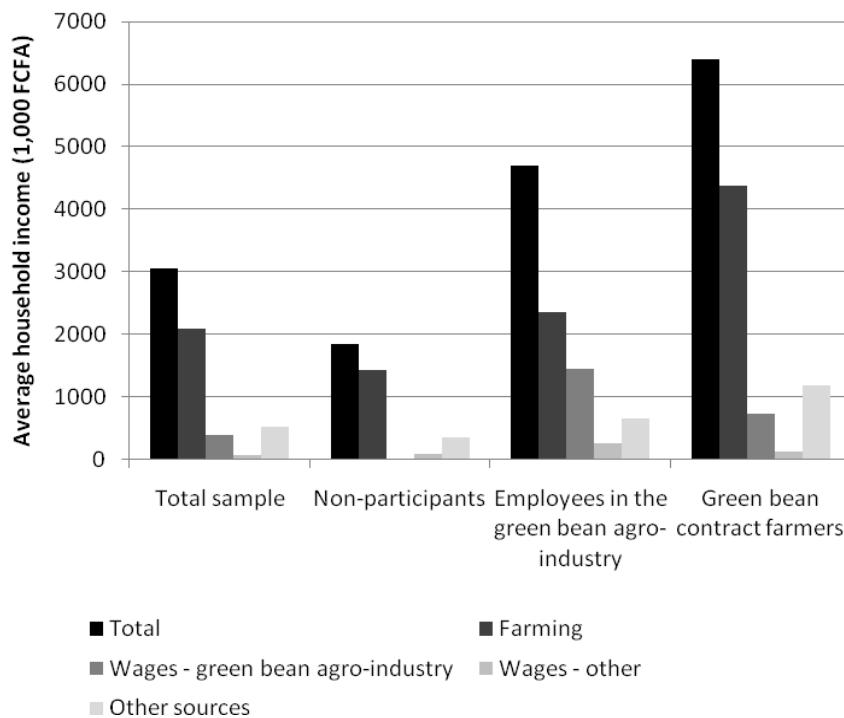
Source: calculations based on FAOstat statistics

Figure 7: Impact of vegetable contract-farming on the length of the ‘hungry’-season in Madagascar



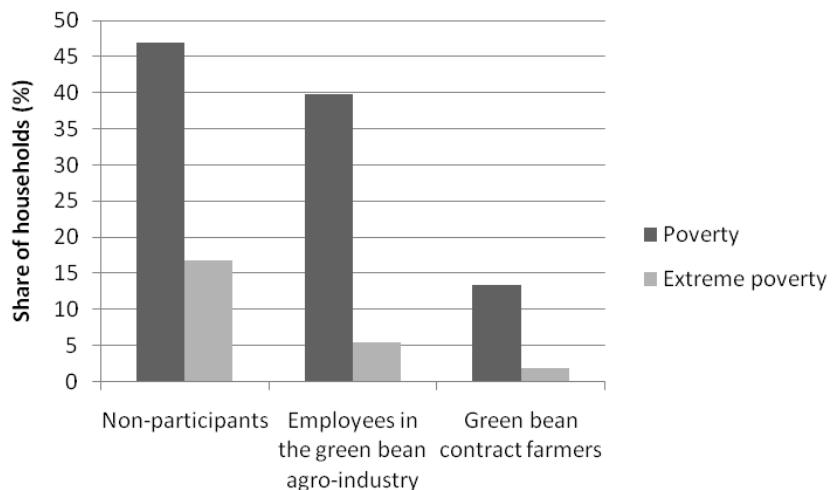
Source: Minten et al., 2006

Figure 8: Income effects of green bean exports in Senegal



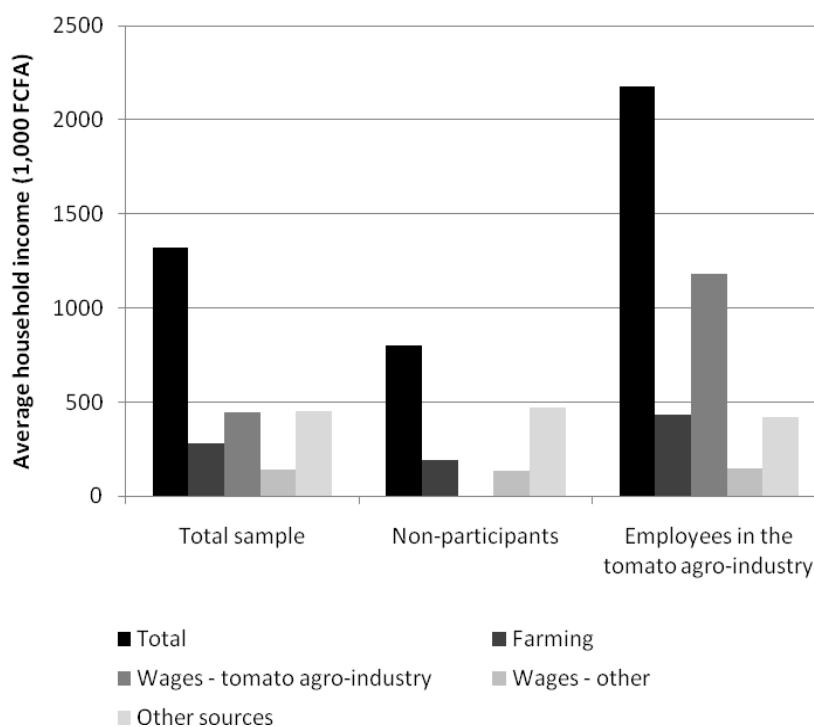
Source: Maertens and Swinnen (2009)

Figure 9: Poverty effects of green bean exports in Senegal



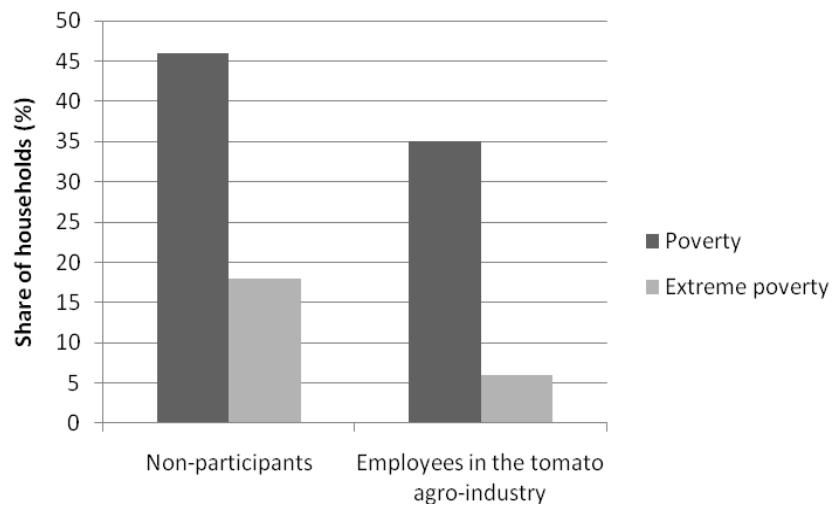
Source: Maertens and Swinnen (2009)

Figure 10: Income effects of tomato exports in Senegal



Source: Maertens, Colen and Swinnen (2008)

Figure 11: Poverty effects of tomato exports in Senegal



Source: Maertens, Colen and Swinnen (2008)

Tables

Table 1: Smallholder procurement in Sub-Saharan African export supply chains

Country	Commodity (group)	Year of survey	Share of exports sourced from smallholders	Number of smallholder producers
Ghana	Fruits & vegetables			3,600
	Pineapples	2006	45%	300 - 400
	Papaya	2006	10-15%	
	Vegetables	2002	95%	
Cote d'Ivoire	Pineapple	1997	70%	
	Mango	2002	< 30%	
	Banana	2002	100%	
Senegal	French beans	2005	52%	600 - 900
	Tomatoes	2006	0%	0
Kenya	Fresh fruit and vegetables	2002	± 50%	12,000 - 80,000
Madagascar	Fresh vegetables	2004	90-100%	9,000
Zambia	Vegetables	2003		300
Zimbabwe	Fruits & vegetables	1998	6%	10

Source: Legge et al (2006) and Millennium Challenge Account (2006) for Ghana; Rouge and N'Goan (1997) quoted in Minot and Ngigi (2004) for Pineapple in Cote d'Ivoire; Lambert (2002) for mango and banana in Cote d'Ivoire; own calculations from case-studies for Senegal; Jaffee (2003) and Asfaw et al. (2007) for Kenya; Minten et al. (2006) for Madagascar; Smith et al (2004) for Zambia; and Dolan and Humphrey (2001) and Legge et al. (2006) for Zimbabwe.

Table 2: Employment in Sub-Saharan African export horticulture supply chains

Country	Commodity	Year of survey	Number of employees in the FFV agro-industry	Share of female employees
Cameroon	Banana	2003	10,000	
Cote d'Ivoire	Banana and pineapple	2002	35,000	
Kenya	Flowers	2002	40,000 - 70,000	75%
	Fruits & vegetables		2,000,000	
Senegal	French beans	2005	12,000	90%
	Cherry tomatoes	2006	3,000	60%
Uganda	Flowers	1998	3,300	75%
Zambia	Vegetables	2002/03	7,500	65%
	Flowers		2,500	35%
South Africa	Deciduous fruit	1994	283,000	53%

Source: Arias (2003) for Cameroon; Minot and Ngigi (2004) for Cote d'Ivoire; own calculations from case-studies for Senegal; Smith et al. (2004) and Barrientos et al. (2001) for Zambia and flowers in Kenya; Jaffee (2003) and Lambert (2002) for fruits and vegetables in Kenya; Danson et al. (2004), and Barrientos et al. (2000) for South Africa.