DIRECTORATE FOR FOOD, AGRICULTURE AND FISHERIES
COMMITTEE FOR AGRICULTURE

Working Party on Agricultural Policies and Markets

MARKET ACCESS AND PRIVATE STANDARDS: CASE STUDY OF THE GHANA FRUIT MARKETS

Contact person: Linda Fulponi (e-mail: linda.fulponi@oecd.org)
PREFACE

The case study of Ghana is one of four which form the basis for the paper “Private standard schemes and developing country access to global value chains: challenges and opportunities”. It was prepared by Professor Spencer Henson of the University of Guelph, and Professors Henry Anim-Somauah and Samuel Asuming-Brempong of the University of Ghana.
# TABLE OF CONTENTS

1. Introduction: ............................................................................................................................................ 4  
2. Trends in fruit and vegetable exports: ..................................................................................................... 5  
3. Institutional and policy environment: .................................................................................................... 13  
4. Factors influencing export competitiveness: ......................................................................................... 15  
5. Role of food safety and quality standards: ............................................................................................ 17  
6. Impact of private food safety and quality standards: ............................................................................. 25  
   - Product and process requirements: ........................................................................................................ 25  
   - Information and communication on standards: ..................................................................................... 34  
   - Monitoring producers: ........................................................................................................................... 36  
   - Conformity assessment procedures, certification and audits: ............................................................... 37  
   - Supply chain coordination and traceability: .......................................................................................... 37  
   - Value-added activities: ........................................................................................................................ 38  
   - Logistics: ........................................................................................................................................... 38  
   - Supply chain behaviour and structural change: ................................................................................... 38  
7. Conclusions: .......................................................................................................................................... 39  

REFERENCES ............................................................................................................................................. 41  

**Boxes**

Box 1. Out-grower production of pineapples – the case of Tongu Farms................................................. 11  
Box 2. Costs and benefits of EUREPGAP certification: ............................................................................. 31
PRIVATE STANDARDS AND DEVELOPING COUNTRY ACCESS TO GLOBAL SUPPLY CHAINS CASE STUDY: GHANA

1. Introduction:

1. Situated in West Africa near the Equator with over 500 km of coastline and a tropical climate, Ghana is a stable democracy with a population of 22 million. It has a rich resource base which includes timber and a variety of minerals, such as gold, diamonds, bauxite, and manganese. In addition it has one of the most developed industrial sectors among West African countries and includes textiles, steel and vehicle assembly. Nonetheless it is the agricultural sector which dominates the economy employing about 60% of labour force. Over recent years real per capita income growth has been fairly strong and has generally exceeded that other sub-saharan African countries, nonetheless its per capita income remains low - a little over USD 430 (IMF). Given the present structure of the economy, agriculture is expected to remain an important for its economic growth and structural transformation.

2. While emphasis is being given to increasing domestic food supplies through higher productivity, efforts are also being made to increase and diversify exports of non-traditional products. While cocoa will continue to be Ghana’s dominant traditional export product, there is likely to also be a push toward improving export prospects of non-traditional agricultural products such as fruits and vegetables. With the increasing use of private standards for fresh produces, entering these high value product markets can present a number of challenges to countries such as Ghana. Of particular concern is the potential impact of food safety and quality standards on trade in agricultural and food products (Baldwin, 2001; OECD, 2003; Josling et al., 2004), reflecting both the proliferation of food safety and quality standards and increasing recognition of the importance of non-tariff measures for international trade in agricultural and food products (Henson and Loader, 2001). Regulatory measures, which are legally binding requirements, are now increasingly pervaded by a plethora of private food safety and quality standards that operate alongside official controls and which, although binding in a regulatory sense, can be de facto mandatory for suppliers to markets where these are applied (Henson and Northen, 1998; Fulponi, 2005). Further, there is evidence that private standards, which are well established in many industrialised countries, are fast becoming a global phenomenon, and pervading even developing country agri-food markets (Reardon et al., 2001; Henson and Reardon, 2005).

3. The role that private food safety and quality standards play in international markets for agricultural and food products is beginning to be recognized (see for example Jaffee and Henson, 2005; World Bank, 2005), yet there is a glaring lack of empirical studies, as a result of which many of the claims about the trade effects of such standards are anecdotal, at best. Thus, it is a case study approach that is employed here, within the framework of a common framework that permits comparison with a parallel series of studies in other countries.

4. The aim of this case study is to explore the role of private standards in determining market access and export performance in Ghana, specifically for fruits and vegetables. The case study is based on a review of secondary data, interviews with key government and industry informants and a series (n=14) of interviews with firms engaged in the export supply chain for fruit and vegetables exporters, and specifically pineapple, papaya, mango, bananas and vegetables, as follows:
5. Most of these interviewees were supply export markets and had complied with private food safety standards such as EUREGAP. These interviews followed a standard interview guide. In addition, informal interviews were undertaken with six producers and/or exporters that had not upgraded their food safety controls in response to export market requirements. All of these interviews were undertaken over the period January to June 2006 in an area within 50 km of Accra.

6. The case study starts by outlining the performance of fruit and vegetable exports from Ghana and then proceeds to review the institutional and policy environment and level and nature of constraints on export performance in general, before focusing in on the role of private standards. The case study concludes by outlining key themes associated with the interface between fruit and vegetable exports and private standards.

2. Trends in fruit and vegetable exports:

7. Merchandise exports from Ghana continue to be dominated by cocoa, minerals and timber; collectively these commodities accounted for 76.3% of exports by value in 2004 (Figure 1). Indeed, the proportion of exports represented by these traditional exports increased over the period 2001 to 2004, from 62.7% to 76.3%. At the same time, however, non-traditional exports have demonstrated significant growth from USD 400.7 in 2000 to USD 705.4 in 2004. These non-traditional exports are regarded by the Ghanaian government as both the means to expand export earnings and to diversify away from a narrow range of relatively low value-added commodities that are exposed to swings in global commodity prices.

8. Agriculture remains the mainstay of the Ghanaian economy and is recognized to be the principle sector for economic development and poverty alleviation in the foreseeable future. In 2002, agriculture contributed 36% to national GDP and employed 51% of the labour force. According to the latest Ghana Living Standards Survey (GLSS), 2.75 million households own or operate a farm or keep livestock, accounting for 43% of households nationwide. Thus, a major focus of the Ghanaian government has been on the export performance of agriculture as part of its agribusiness and export-focused strategy for development.

9. The category of non-traditional exports consists of a wide range of commodities including agricultural products, processed and semi-processed products and handicrafts (Figure 2). Over the period 1991 to 2004, the contribution of agricultural products to non-traditional exports declined from 52.8% to 22.7%, reflecting high rates of growth of processed and semi-processed products. Among exports of processed and semi-processed products, prepared foods and beverages accounted for 19.1% by value in 2004. Indeed, exports of prepared foods and beverages have expanded significantly in recent years as attempts have been made to add value to non-traditional agricultural product exports, with prepared pineapple a notable example.

---

1 Defined by the Ghana Export Promotion Council (GPEC) as all products other than cocoa, logs and timber, unprocessed gold and electricity.
Among agricultural exports, fruit and vegetables accounted for 38.0% in 2004, of which pineapple alone represented 13.8% (Figure 3). Other major agricultural non-traditional exports include tuna and other fishery products, which collectively accounted for 33.0% in 2004. A wide range of other agricultural products account for the residual.
11. The value of fruit and vegetable exports increased significantly over the period 1991 to 2004 from USD 8.4 million to USD 60.5 million. This growth reflects the particularly strong performance of non-pineapple exports that increased from USD 3.3 million in 1991 to USD 38.4 million in 2004. Over this same period, the number of fruit and vegetable products exported from Ghana increased from 24 to 34 (Figure 4), as attempts were made towards the diversification of exports away from established products such as pineapple and yam (see below).

![Figure 3. Value of non-traditional horticultural exports, 1991-2004](image)

Source: Ghana Export Promotion Council

![Figure 4. Number of non-traditional agricultural products exported, 1991-2003](image)

Source: Ghana Export Promotion Council
12. The expansion of non-traditional agricultural exports has been accompanied by an increase in the number of firms undertaking exports, some of which previously focused on domestic markets, while others are new entrants to the sector (Figure 5). Most notably, the number of firms exporting fruit and vegetables apart from pineapple increased from 466 in 1991 to 960 in 2004. At the same time, however, exports continue to be dominated by a small number of more commercialised or leading firms, with a large number of smaller operators exporting on a more informal and irregular basis according to market supply and/or demand conditions.

13. Exports of pineapple, valued at USD 28.8 million in 2004, alone account for over 75% of fruit exports (Tables 1 and 2). Other significant products include citrus fruits and papaya. Major export markets include the UK, that alone accounted for 39.8% of fruit exports in 2004 (Table 3), Germany, Netherlands, Belgium Switzerland, Netherlands, Italy and India.

14. Ghana started to export pineapple in the 1970s, taking advantage of low air freight costs over competitors, most notably Côte d’Ivoire and Costa Rica, although commercial production did not commence until the 1980s. In 1995, the industry organisation Sea Freight Pineapple Exporters of Ghana (SPEG) was created to coordinate access to regular sea freight through the main port of Tema in a bid to enhance competitiveness with Côte d’Ivoire.

![Figure 5. Number of non-traditional agricultural exporters, 1991-2003:](image)

Source: Ghana Export Promotion Council

15. Although there has been some investment in cold storage facilities, the supply chain for most fruits remains rudimentary. Frequently, produce is assembled and packed for export in the field and transportation to the port of exit, whether by air or sea, is in open trucks. Export facilities at both the air and sea port lack facilities designed to handle fresh fruit and lack chilled storage facilities, although construction of a dedicated fresh produce export facility is underway in Tema.
### Table 1. Volume of major fruit and vegetable exports, 2001-2004 (Tonnes)

<table>
<thead>
<tr>
<th>Product</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roots/Tubers/Plantain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yam</td>
<td>14,410</td>
<td>14,025</td>
<td>7,974</td>
<td>4,442</td>
</tr>
<tr>
<td>Coco yam</td>
<td>172</td>
<td>224</td>
<td>228</td>
<td>80</td>
</tr>
<tr>
<td>Plantain</td>
<td>587</td>
<td>932</td>
<td>804</td>
<td>226</td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pineapple</td>
<td>35,174</td>
<td>46,391</td>
<td>45,145</td>
<td>71,805</td>
</tr>
<tr>
<td>Banana</td>
<td>3,251</td>
<td>3,233</td>
<td>364</td>
<td>226</td>
</tr>
<tr>
<td>Papaya</td>
<td>1,792</td>
<td>1,474</td>
<td>1,917</td>
<td>764</td>
</tr>
<tr>
<td>Oranges(Fresh)</td>
<td>1,336</td>
<td>15,213</td>
<td>4,307</td>
<td>329</td>
</tr>
<tr>
<td>Lime/Lemon</td>
<td>778</td>
<td>1,310</td>
<td>1,406</td>
<td>245</td>
</tr>
<tr>
<td><strong>Vegetables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepper/Chillies</td>
<td>5,281</td>
<td>4,687</td>
<td>4,674</td>
<td>1,822</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>4,539</td>
<td>4,961</td>
<td>4,369</td>
<td>427</td>
</tr>
<tr>
<td>Tinda</td>
<td>1,256</td>
<td>1,137</td>
<td>1,136</td>
<td>636</td>
</tr>
<tr>
<td>Aubergine</td>
<td>1,295</td>
<td>1,512</td>
<td>1,867</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Ghana Export Promotion Council

16. Most pineapple is grown in the south east of Ghana within two to three hours of Accra. Production is dominated by a small number of integrated producer-exporters, with a large number of small-scale producers accounting for 30-40% of production (Voisard and Jaeger, 2003). However, many exporters, including those that are also engaged in production, source from small-scale producers under contract (see Box 1 for an example); indeed, Ghana is often highlighted as a country where small-scale producers have played a significant role in the export supply chain for pineapple, in contrast to the overwhelming dominance of plantation production in Côte d’Ivoire and Costa Rica.

### Table 2. Value of major fruit and vegetable exports, 2001-2004 (USD million):

<table>
<thead>
<tr>
<th>Product</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roots/Tubers/Plantain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yam</td>
<td>7.79</td>
<td>8.25</td>
<td>16.17</td>
<td>8.40</td>
</tr>
<tr>
<td>Coco yam</td>
<td>0.06</td>
<td>0.08</td>
<td>0.06</td>
<td>0.04</td>
</tr>
<tr>
<td>Plantain</td>
<td>0.15</td>
<td>0.17</td>
<td>0.11</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pineapple</td>
<td>13.32</td>
<td>15.52</td>
<td>14.38</td>
<td>22.07</td>
</tr>
<tr>
<td>Banana</td>
<td>3.19</td>
<td>3.25</td>
<td>0.73</td>
<td>0.21</td>
</tr>
<tr>
<td>Papaya</td>
<td>0.99</td>
<td>0.87</td>
<td>3.75</td>
<td>1.27</td>
</tr>
<tr>
<td>Oranges(Fresh)</td>
<td>0.13</td>
<td>3.25</td>
<td>0.74</td>
<td>0.09</td>
</tr>
<tr>
<td>Lime/Lemon</td>
<td>0.12</td>
<td>0.20</td>
<td>0.07</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Vegetables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepper/Chillies</td>
<td>1.94</td>
<td>1.78</td>
<td>2.58</td>
<td>0.99</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>0.76</td>
<td>1.10</td>
<td>0.61</td>
<td>0.06</td>
</tr>
<tr>
<td>Tinda</td>
<td>0.53</td>
<td>0.59</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Aubergine</td>
<td>0.52</td>
<td>0.46</td>
<td>0.70</td>
<td>0.26</td>
</tr>
</tbody>
</table>

Source: Ghana Export Promotion Council

17. In 2004, there were 65 pineapple exporters, of which 12 had exports exceeding 1,000 tonnes. Most exporters are Ghanaian-owned small and medium-sized enterprises (SMEs). One of the leading
exporters, however, is Farmapine, a marketing and processing firm that is jointly owned by five small-scale producer cooperatives and two exporters. There is limited foreign investment in the sector, although Compagnie Fruitiere, a French pineapple exporter in which Dole has a 40% shareholding, has recently established an integrated production-export operation in Ghana. Although there are informal exporters of pineapple, these are less common than for other commodities; indeed the average number of years the interviewees in the current study had been engaged in pineapple exports was eight.

Table 3. Value of fruit exports by destination, 2001-2004 (USD million):

<table>
<thead>
<tr>
<th>Destination</th>
<th>2000</th>
<th>2001</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>1.31</td>
<td>7.59</td>
<td>7.64</td>
<td>11.50</td>
</tr>
<tr>
<td>India</td>
<td>1.79</td>
<td>0.10</td>
<td>2.15</td>
<td>7.92</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1.67</td>
<td>1.49</td>
<td>6.44</td>
<td>2.68</td>
</tr>
<tr>
<td>Netherlands</td>
<td>11.47</td>
<td>2.02</td>
<td>2.82</td>
<td>1.94</td>
</tr>
<tr>
<td>Italy</td>
<td>2.40</td>
<td>2.94</td>
<td>4.35</td>
<td>1.48</td>
</tr>
<tr>
<td>Germany</td>
<td>4.33</td>
<td>5.17</td>
<td>9.02</td>
<td>0.74</td>
</tr>
<tr>
<td>Belgium</td>
<td>1.38</td>
<td>2.84</td>
<td>3.67</td>
<td>0.37</td>
</tr>
<tr>
<td>France</td>
<td>0.90</td>
<td>0.98</td>
<td>2.41</td>
<td>0.33</td>
</tr>
<tr>
<td>USA</td>
<td>3.41</td>
<td>0.18</td>
<td>0.16</td>
<td>0.01</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2.60</td>
<td>0.89</td>
<td>0.58</td>
<td>0.04</td>
</tr>
<tr>
<td>Togo</td>
<td>0.40</td>
<td>0.39</td>
<td>1.82</td>
<td>0.00</td>
</tr>
<tr>
<td>Other</td>
<td>0.97</td>
<td>0.76</td>
<td>4.48</td>
<td>0.03</td>
</tr>
<tr>
<td>Total</td>
<td>32.62</td>
<td>25.36</td>
<td>43.72</td>
<td>28.86</td>
</tr>
</tbody>
</table>

Source: COMTRADE

18. Ghana targets a low price-low quality niche in the European pineapple market, predominantly the UK, Germany, Italy, Switzerland and Belgium (Danielou and Ravry, 2005). Although it is the third largest exporter to the EU, it is not a major competitor to the market leaders, Côte d’Ivoire and Costa Rica. Further, the prices received by Ghanaian exporters are in decline due to the inconsistency of quality and supply and shifts in market demand; while Costa Rica has spearheaded the supply of a sweeter variety of pineapple (MD2) that corresponds more closely with consumer tastes, most production in Ghana remains the Smooth Cayenne variety.

19. Some attempts have been made to export processed pineapple products as a means to add value and overcome low market prices. Thus, firms are engaged in the production of fresh cut pineapple (Blue Skies, Tongu Farms and First Catering) and fruit salad (Blue Skies) and juicing (Blue Skies, Milani and Athena), although most juice is aimed at local markets. Exports of both peeled and cut pineapple, in particular, have exhibited good export performance (Figure 6). In addition, one exporter has penetrated markets for organic pineapples in Europe based on small-scale production of a traditional local variety (Sugar Loaf).

20. Although exports of papaya remain small in comparison to pineapple, they grew strongly in the 1990s. In 2002, Ghana was the second largest supplier to the EU, predominantly the UK and Germany, although market supply is massively dominated by Brazil. Exports have been built on the Hawaiian Solo variety that was introduced in the early 1990s, although market demand has switched towards the Golden variety developed in Brazil and there is a need to switch production. Further, the Hawaiian Solo variety easily damages which necessitates air freight and is often the cause of quality discounts in European markets.
Box 1. Out-grower production of pineapples – the case of Tongu Farms

Tongu Fruits, a Dutch company established in 1999, processes pineapple juice and slices for export to Europe. Initially based in Accra, Tongu Fruits developed their own production facilities in 2001.

In the early 2000s, the Dutch supermarket chain Ahold proposed that Tongu Farm become its preferred supplier if the company could regularly provide it with a minimum volume of fruit. To meet that need Tongu needed to increase its production. Because of financial constraints it was unable to increase its own production capacity and was forced to turn to out-growers.

The out-grower scheme implemented by Tongu Farms consists of a five-year contract under which an initial selected group of 30 growers was chosen. In the first year, the growers work on the company's plantation. In the second year, they grow pineapples on one hectare of land that belongs to the company, for which they receive the necessary inputs as well as cash advances. Additional revenues are provided based on performance. Half of the income paid by the company is banked in a savings account for five years and the other half is paid in cash. At the end of the five years, the growers have the choice to stay on the farm as out-growers on the company's land or become independent holders.

Source: Danielou and Ravry (2005)

21. The supply chain for papaya is rudimentary and subject to many of the same problems as pineapple, most notably the lack of cold storage facilities at the airport. Only six firms have annual exports exceeding 100 tonnes, although a number of these are also engaged in pineapple exports. There are a number of informal exporters engaged in the papaya sector that enter and level the market according to supply and market demand, often in response to inquiries or one-off orders from buyers in Europe.

22. Despite the rapid growth in demand for mango in the EU, Ghana has not capitalised on this potentially lucrative market opportunity. Thus, while Côte d'Ivoire exported 11 000 tonnes of mango to the EU in 2002, Ghana’s exports were only 125 tonnes (Voisard and Jaeger, 2003). Although production does suffer from fungal problems due to the coastal proximity of farms, the varieties grown in Ghana are suited to European market demand. According to the 1996 agricultural census, only 30 farms cultivated mangoes, of which only eight had more than 3 000 trees. In 2002, there were 33 exporters, of which two accounted for around 35 tonnes. Predominant export markets are wholesale markets in the UK, South Africa and Belgium.

23. Recently, initiatives have been taken to exploit potential export opportunities for mango, most notably under the Horticultural Export Industry Initiative (HEII), with funding provided by USAID’s Trade and Investment Program for Competitive Export Economy (TIPCEE) (see below). Again, a major constraint to exports has been the lack of cold storage facilities at the sea and air ports.
24. Exports of citrus products are mainly directed at regional markets, especially Togo. There are only very minor lemon and other citrus products exports to industrialised country markets.

25. Vegetables exports from Ghana consist of a wide array of products including roots and tubers, plantain and ‘Asian vegetables’ such as chillies, okra, tinda, aubergine, guar beans, yard long beans, gourds and marrows (Tables 1 and 2). However, exports are dominated by yam, which alone were valued at USD 9.8 million and accounted for 86% of vegetable exports in 2004. Around 53% of vegetable exports in 2004 were to the UK, predominantly wholesale markets (Table 4).

26. The supply chain for vegetable exports is best characterised as unsophisticated and rudimentary, with a polarized structure with established larger integrated producer-exporters at one extreme and informal irregular exporters at the other. Most products for export are grown in south east Ghana, within a radius of around 50 kilometres of the international airport in Accra. Packhouses tend to be basic and many products are harvested and assembly for export in the field, although re-sorting often occurs in the cargo facility at the airport. There are little or no facilities through the supply chain for the chilled distribution of vegetables.

27. A large number of firms are engaged in yam exports, with the leading five firms accounting for only 30% of exports. At the same time, there are numerous informal exporters that enter and leave the market on an on-going basis. Although there is an active association for more committed exporters, most firms are casual, entering and leaving the market according to available supply and market prices. Despite this, Ghana is the dominant supplier of yam to the EU, most notably the UK, and also has significant trade with the United States and countries in the region, especially Côte d’Ivoire. Indeed, despite the rudimentary nature of the supply chain, Ghana is regarded as a high quality supplier among the immigrant communities to which it targets supplies. Most yams are destined for wholesale markets and, ultimately, smaller local grocery stores in urban centres.
Table 4. Value of vegetable exports, 2001-2004 (USD million):

<table>
<thead>
<tr>
<th>Destination</th>
<th>2000</th>
<th>2001</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>3.95</td>
<td>3.09</td>
<td>3.94</td>
<td>5.11</td>
</tr>
<tr>
<td>USA</td>
<td>1.73</td>
<td>1.71</td>
<td>1.66</td>
<td>1.36</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.65</td>
<td>0.77</td>
<td>0.37</td>
<td>1.10</td>
</tr>
<tr>
<td>Germany</td>
<td>0.34</td>
<td>0.44</td>
<td>0.16</td>
<td>0.36</td>
</tr>
<tr>
<td>Italy</td>
<td>0.14</td>
<td>0.11</td>
<td>0.43</td>
<td>0.29</td>
</tr>
<tr>
<td>Canada</td>
<td>0.12</td>
<td>0.13</td>
<td>0.15</td>
<td>0.26</td>
</tr>
<tr>
<td>Other</td>
<td>0.69</td>
<td>1.03</td>
<td>5.72</td>
<td>1.11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7.63</strong></td>
<td><strong>7.28</strong></td>
<td><strong>12.44</strong></td>
<td><strong>9.59</strong></td>
</tr>
</tbody>
</table>

Source: COMTRADE

28. Trade in ‘Asian vegetables’ is dominated by firms that are operated by native Ghanaians or immigrants of Asian decent. The main export is chillies which, like most products in this category, are predominantly aimed at the immigrant market in the UK. Major competitors in the UK market include Kenya and Bangladesh. There are also significant chilli exports to countries in the region. Although at least one exporter has established links with an importer/wholesaler that supplies UK supermarkets, most exports are destined for wholesale markets that supply local grocery stores in urban centres.

29. Overall, the major driving factor in vegetables exports from Ghana is cost rather than quality. Margins tend to be very tight and minimum volumes are a critical determinant of the profitability of the trade. Exports are thus predominantly to markets that have relatively low quality and/or safety standards driven by regulatory rather than private requirements. Most exporters have a supply orientation, engaging in very limited marketing activities, which are reflected in the fact that there are relatively few established exporter brands.

3. Institutional and policy environment:

30. As part of efforts to enhance non-traditional exports and facilitate the enhancement and diversification of farm incomes, the horticultural export sector has received significant public support in recent years. Indeed, government attention to the sector intensified from the early 1990s when Ghana began to pursue export demand-led growth as part of its Medium-Term Agricultural Development Programme (Ministry of Agriculture, 1990). As part of this program the Agricultural Diversification Project was implemented to revitalise and expand production of non-cocoa tree crops and horticultural crops. This included technical packages for farmers, promotion of markets, infrastructural development and organisation of small-holder production. The policy was implemented by both public and private sector institutions.

31. More recently, the Ghanaian government has implemented the Horticultural Export Industry Initiative (HEII) under the Agricultural Services Sub-Sector Investment Programme (AgSSIP). The HEII has seven components as part of an integrated two year programme with a budget of USD 8.95 million, as follows:

- **Post-harvest infrastructure:** This component seeks to develop and improve post-harvest handling infrastructure at the field level, international airport in Accra and Tema sea port. A full-service perishable cargo facility is to be constructed at the airport and a cold storage facility with pre-cooler in Tema. Further, pilot field sheds are to be established to provide post-harvest services to small-holders and exporters in an attempt to establish a cold chain from production through to export.
• **MD2 pineapple sourcing and development**: This aims to make MD2 planting materials available to small-holder farmers for rapid sucker multiplication and distribution.

• **Innovative research and development, planting material sourcing and development**: This component aims to develop capacity to source, test, propagate and multiply elite planting materials on a sustainable basis. It also aims to provide innovations and technological packages as well as diversification options through the development of new products.

• **Food safety and quality management**: This component aims to establish a definite pesticide list for all fresh produce export crops, support the implementation of gap by small-holder farmers and achieve the certification of the gsb laboratory to undertake pesticide residue analysis.

• **Farmer ownership model (FOM) and industry ownership model (IOM)**: The aim here is to establish a number of FOMs and IOMs within the horticultural sector, including post-harvest infrastructure, planting materials supply, strategic support and research and development.

• **Strategic support**: This component aims to encourage the formation and strengthening of cluster dynamics among stakeholders in the horticultural industry by providing existing structures with capacity to gather and disseminate strategic information such as market trends, consumer perception, etc.

• **Support to mango out-growers in northern Ghana**: This component aims to support 2,000 out-growers with a 50% matching grant to access quality mango seedlings and provide related technical assistance.

32. In practice, the predominant role of government in the fruit and vegetable export sector to date has been in establishing general policy directions and industry regulation. In part this reflects the very limited resources available to MOFA that limits its ability to pursue policy implementation initiatives. For example, the Horticultural Development Unit in the Crop Services Directorate of the Ministry of Food and Agriculture (MOFA), that has responsibility for developing the horticultural sector, only has ten personnel. While extension services are provided at the district level, typically these are under-resourced and do not specifically focus on fruits and vegetables. The Crops Research Institute in Kumasi is responsible for research related to fruits and vegetables but in practice its activities are limited to the maintenance and characterization of the papaya germ plasm.

33. In the case of targeted (and often externally-funded) initiatives, however, MOFA has played a demonstrable role in the development of the fruit and vegetable sector. For example, the Horticultural Development Unit has developed improved production packages for producers of pineapple, including production manuals and a handbook on proper use of fertilizers and agro-chemicals. This project trained 200 small-scale farmers, 60 farm managers on medium and large-scale farms and scientists and extension agents. Likewise, MOFA was involved in the implementation of Farmpines (see above) under a project funded by the United States Agency for International Development (USAID).

34. The Ghana Export Promotion Council (GEPC) is the public agency charged with developing non-traditional exports. The GEPC has been involved in training exporters on good practices in export trade including quality, packaging, minimum volumes and price information. It has also been involved in infrastructure development related to export promotion, including roads.

35. The private sector has been actively involved in the development of fruit and vegetables exports in Ghana, and arguably has been the dominant force behind the export successes that have been observed in recent years. However, this has tended to occur more at the level of leading firms rather than a coherent
strategy on the part of industry organizations. At the same time, however, a number of industry organizations representing producers and/or exporters have played an instrumental role in facilitating capacity-building including the Sea Freight Pineapple Exporters of Ghana (SPEG), Horticulturist’s Association of Ghana (HAG), Vegetable Producers and Exporters Association of Ghana (VEPAG), Ghana Association of Vegetable Exporters (GAVEX) and Federation of Associations of Ghanaian Exporters (FAGE). A number of these organisations have been involved in awareness-raising and training at the broad level of food safety and quality standards (for example FAGE) and at the level of agronomic practices related to implementation of good agricultural practices (GAP) (for example VEPAG and HAG). However, despite the attempts of FAGE to act as a sector-wide ‘voice’, there is a lack of a coherent strategy for the industry as a whole and individual associations tend to pursue ‘their own thing’. At the same time, the capacity and sustainability of these organizations varies widely. While organizations such as VEPAG are dependent on external assistance from donors (the most active of which has been USAID) and many members are inactive, others (for example SPEG) are financially independent and have an active membership.

36. Donor support to the organizational and managerial development of fruit and vegetable producers and exporters has come from the Trade and Investment Program (TIP) and the Trade and Investment Reform Program (TIRP) of USAID. Under these programs, US-based NGOs, AMEX International and Technoserve have been contracted to assist exporters and producers, including: 1) supporting nucleus-farmer to out-grower linkages; 2) improving service delivery to small-holders; 3) promoting the commercialization of horticultural production, including formation of farmer organisations and managerial capacity-building; 4) identification of niche markets; and 5) provision of training programs for farm managers and other technical personnel in pesticide management, harvesting techniques and post-harvest handling technologies.

37. USAID’s recently-implemented Trade and Investment Program for Competitive Export Economy (TIPCEE) program also focuses on the horticultural sector. This project includes components aimed at expanding market access, increasing the capacity of enterprises and small-holders to respond to market demand, increasing delivery of demand-driven services and improving policy development and implementation. Likewise the Millennium Challenge Corporation supported by USAID has identified horticulture as a promising source of export-led agricultural growth for Ghana and is currently undertaking feasibility studies to promote fruit and vegetable crops to new areas of southern Ghana with good agro-ecological potential.

4. Factors influencing export competitiveness:

38. Before proceeding to look at the specific role of food safety and quality standards in general, and private standards in particular, it is important to examine the prevailing export competitiveness of Ghana’s fruit and vegetable exports; the impact of food safety and quality standards will inevitably reflect prevailing competitiveness pressures and it is important to interpret the impact of such standards in this context (Jaffee and Henson, 2004).

39. To date, Ghana’s export competitiveness has been driven predominantly by its access to lower cost air and sea freight than regional competitors (Voisard and Jaeger, 2003; Accord Associates, 1998). In particular, its significant advantage in air freight costs against other competing origins, such as Kenya (vegetables) and Côte d’Ivoire (pineapple) have enabled it to capture a larger part of low value-added markets where air freight costs are the driving cost factor. This strategy has had a much a lesser effect on the development of high-value segments, however, where the incidence of freight costs is much lower. Further, sea freight rates are more comparable to those of Ghana’s competitors, most notably Côte d’Ivoire, although the frequency and reliability of sea freight capacity has been enhanced by the activities of SPEG.
40. Input costs are a second factor influencing Ghana’s export competitiveness (Voisard and Jaeger, 2003). Specific inputs for horticulture are available and distributed by specialised firms and economies of scale are generally lower than those of neighbouring countries such as Côte d’Ivoire. Further, the pesticide market is distorted by the black market trade in chemicals often of unknown source and composition. Seed availability is fairly limited and most exporters rely on their own multiplication, their own import channel and/or production by research stations. Labour costs in Ghana are, however, the lowest among its competitors.

41. Currently, a large part of vegetable, pineapple and other fruit production in Ghana is rain-fed. Although many regions of Côte d’Ivoire have access to surface water as in Ghana, there is generally better year-round availability of water and at lower cost. Diesel costs for power generation, including for irrigation, are also lower.

42. Phytosanitary surveillance and control is the responsibility of the Plant Protection and Regulatory Services Directorate of MOFA. However, capacity to undertake surveillance for key pests, both of significance to production and international trade, is limited and diagnostic facilities are rudimentary. Capacity is sufficient to provide the phytosanitary certification required by importers, although Ghana’s plant pest disease status does preclude access for some products to some markets, most notably the US.

43. In Ghana, fruit and vegetable marketing costs are kept to a minimum, with the merchandising of fruit largely sub-contracted to importers on a consignment or FOB price arrangement (Voisard and Jaeger, 2003. Few exporters have set up on-site agencies to either sell produce or monitor the market. Internal transport costs are estimated to be 40% lower than neighbouring countries. Packaging costs are, however higher than in Côte d’Ivoire. Further, attempts to shift to more value-added products are likely to be hampered by the lack of an adequate supply of packaging from Ghanaian manufacturing firms, necessitating reliance on imports at higher cost and, more importantly, logistics delays.

44. A major marketing constraint faced by Ghanaian exporters is the lack of established brands, whether at the retail (like has been achieved by Del Monte for pineapple in Côte d’Ivoire) or wholesale (as has been established by Kenyan exporters for vegetables) levels. Such brand recognition is important not only as a basis for value-addition, but to extract premia in return for meeting the strict food safety and quality standards of customers.

45. Finally, the competitiveness of Ghanaian fruit and vegetable exports is influenced by a range of economic factors. In general, Ghana’s macro-economic performance and government policies aimed at liberalizing markets and providing tax concessions to non-traditional exports have provided a boost to exporters. However, prevailing bureaucratic procedures, for example in obtaining official export certification, remain an impediment. Further, the variability of the Cedi exchange rate against major international currencies, compared to the fixed exchange rate between the CFA and the Euro, acts to reduce Ghana’s export competitiveness compared to Côte d’Ivoire.

46. In conclusion, over and above (and despite) the role of food safety and quality standards which we examine below, the export performance and positioning of Ghana’s fruit and vegetable exports reflects a wide range of economic factors. Thus, most exports are restricted to a low-cost strategy in order to gain market access by pricing advantageously against regional and international competitors. In the case of products transported by air, there is a natural cost advantage due to lower air freight costs. Conversely, where sea freight is used, for which rates are comparable with competitors, Ghanaian exporters typically compensate with low farm-gate prices and/or marketing margins, assisted by discounted inland transport costs.
5. Role of food safety and quality standards:

47. Having outlined the nature and level of prevailing constraints on Ghana’s exports of fruit and vegetables and the consequent export strategies employed by exporters and market niches that are filled, we turn to the specific role and influence of food safety and quality standards. The degree to which food safety and quality requirements in export markets influence export performance depends on both the specific nature of the public and private standards that are applied and the prevailing capacity of public authorities and private sector firms in the exporting country. Each of these factors is explored in turn below.

48. The predominant focus here is on the food safety and quality standards applied in the markets that Ghana currently services, notably supermarkets in Netherlands, Germany, Switzerland and other parts of continental Europe, wholesale markets across Europe (but especially in the UK) and regional markets. While exports to UK supermarkets, arguably having the most exacting food safety and quality requirements, are relatively small, some exporters have managed to establish supply relations. Further, it is the value-added markets of the UK supermarkets that leading Ghanaian exporters are striving for, especially given the dominance of the UK in current fruit and vegetable exports.

49. The food safety and quality requirements faced by Ghanaian fruit and vegetable exporters reflect the public and private standards applied to a particular product that is supplied to a particular supply chain. Thus, the food safety and quality requirements for any one product, say pineapple, might vary by country (according to differences in public standards) and by buyers within that country (according to differences in private standards). While private standards, both in the form of business-to-business specifications and collective industry codes, will embody regulatory requirements that are enforced at the level of their buyer and/or their customers, they will also reflect the market positioning strategy and risk adversity of the buyer and/or their customers (Henson, 2006).

50. Table 5 presents a compilation and summary of the regulatory and private standards faced by Ghanaian exporters of fruit and vegetables, based on the interviews and a review of previous studies. Three patterns in the food safety and quality standards applied across these alternative supply chains are immediately apparent. Firstly, the dominant factor determining differences in food safety and quality requirements across countries and markets are the private standards of buyers. Secondly, the strictest standards are applied by the major supermarkets, especially in the UK, but also increasingly in continental Europe, most notably the Netherlands, Germany and Switzerland. Finally, there remain significant markets where food safety and quality standards, and especially private standards, remain relatively weak, most notably wholesale markets across Europe.
<table>
<thead>
<tr>
<th>Standard</th>
<th>UK Supermarkets</th>
<th>Dutch German/Swiss Supermarkets</th>
<th>Other Continental European Supermarkets</th>
<th>Wholesale Markets</th>
<th>Regional Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phytosanitary certificate</td>
<td>LLL</td>
<td>LLL</td>
<td>LLL</td>
<td>LLL</td>
<td>L</td>
</tr>
<tr>
<td>Limits on pesticide residues</td>
<td>PPP</td>
<td>PP</td>
<td>C1</td>
<td>C1</td>
<td>-</td>
</tr>
<tr>
<td>HACCP</td>
<td>PP</td>
<td>PP</td>
<td>P</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Traceability</td>
<td>-</td>
<td>-</td>
<td>P</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Microbial contamination</td>
<td>PPP</td>
<td>PP</td>
<td>P</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Good agricultural practice</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>-</td>
</tr>
<tr>
<td>Social welfare conditions</td>
<td>PP</td>
<td>P</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quality grades</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
</tbody>
</table>

**Key:**
- LLL: Legally mandated and strictly enforced
- LL: Legally mandated and some enforcement
- L: Legally mandated and minimal enforcement
- -: No legal requirements
- PPP: Strict private standards
- PP: Some private standards
- P: Weak/minimal private standards
- -: No private standards

51. Collectively, the patterns in food safety and quality standards outlined above suggest that Ghanaian exporters have a choice between markets with strict (and seemingly ever stricter) food safety standards that are associated with high costs of compliance but that might also offer opportunities for value addition and high margins, and markets with weak food safety and quality controls that can be accessed with little or no investment, but where margins are likely to be small. At one extreme are the UK supermarkets that routinely require a range of private standards, including EUREP GAP and the BRC Technical Standards, on an increasing proportion of their suppliers. Major supermarket chains in countries such as Germany, the Netherlands and Switzerland are also implementing such requirements, although these are less of a norm at the current time. Finally, at the other extreme are wholesale markets that are essentially governed by regulatory food safety standards.

52. At the current time, while some Ghanaian exporters are undoubtedly aiming for the upper and lower extremes in terms of food safety and quality standards (for example fair trade fruit and prepared pineapple to UK supermarkets at one end and citrus fruits to wholesale markets in Togo at the other), the majority are currently supplying intermediate markets in terms of their food safety and quality standards; continental supermarkets (especially in Germany, Netherlands and Switzerland) and wholesale markets across Europe (including the UK). In part this strategy reflects the prevailing level of food safety and quality management capacity in Ghana, but also the continued dominance of the markets on which exports from Ghana were established, namely lower priced and lower quality, with which exporters have established relations.

53. Given the focus of this case study is on fruit and vegetables, predominantly in their unprocessed form, it is not unsurprising that the main standards faced by Ghanaian exporters relate to three areas:
1) good agricultural practice; 2) limits on pesticide residues; and 3) traceability. Each is discussed in turn below. While hazard analysis and critical control point (HACCP) is becoming a more prominent issue, at the current time this is not rigorously enforced by most buyers, including European supermarkets. Similarly, social welfare standards, for example the Ethical Trading Initiative in the case of the UK supermarkets, are being more strictly applied over time but currently remain a secondary issue.

54. Good agricultural practice (GAP) standards lay down process requirements for fruit and vegetable products at the farm level, dictating acceptable or unacceptable agronomic practices as they affect product safety, worker safety and/or the environment. In the case of the EU, several Council Regulations refer to the need for agricultural producers to take better account of environmental concerns (Jaffee, 2003). However, the adoption of GAP is yet to become part of any compulsory requirement in EU law or that of any individual Member State.

55. Within the private sector and among major supermarket chains in particular, however, there is growing recognition that consumers are concerned about the ‘sustainability’ of the food supply system and the nature of the practices and technologies used in primary agricultural production. This has manifested itself in private sector efforts to develop, implement and enforce various ‘codes of practice’ for proper management of natural resources and environmental risks. In some cases these have taken the form of business-to-business standards. Increasingly, it is collective private standards that have become the predominant driver for the adoption of what are generally recognized to be good agricultural practices by farmers.

56. The first attempt to establish a collective private GAP standard in Europe came with the Assured Produce Scheme in the UK (Jaffee, 2003; Henson, 2006). While this scheme started to put GAP ‘on the map’ within the UK, given that an increasing proportion of fruit and vegetables were being sourced internationally, the major supermarkets also saw the need to establish a pan-European private standard. In 1997 a Euro-Retailer Working Group on Fresh Produce (EUREP) was formed, in which a number of UK supermarket chains were the primary proponents. It established a set of protocols for the application of good agricultural practice, known as EUREPGAP. These have subsequently been revised on a number of occasions, such that EUREPGAP remains an evolving standard for the application of GAP, including requirements in relation to site management, varieties and rootstocks, soil management, fertilizer usage, irrigation, crop protection and waste and pollution management. The EUREPGAP protocol also includes stipulations with regard to worker health and welfare and wildlife conservation. At present over 250 control points have been identified, of which over 50% define criteria for the correct use of chemicals during crop production and post-harvest treatment. It is the dominant private standard used by European retailers in fresh produce imports and is thus of substantial importance for Ghana’s exports to the EU.

57. Inspection and certification of production facilities to EUREPGAP is undertaken by independent EUREP-approved agencies. The vast majority of approved certifiers are in industrialised countries, with only five approved certifiers in Africa and none in Ghana. This requires that Ghanaian producers/exporters use a foreign certifier, often at greater cost. In some African countries (for example Kenya), national GAP standards and certification systems have been developed that have been benchmarked and approved as equivalent to EUREPGAP. To date, this has not been achieved in Ghana.

58. Within the EU, significant changes in the regulation of pesticides have unfolded over the past decade that are beginning to alter the production practices available to producers and/or exporters in countries such as Ghana. There are two inter-related dimensions to this regulatory shift, namely changes in the process of pesticide assessment and registration and changes in the setting of acceptable maximum residue levels in food and in programs to monitor such residues (Jaffee, 2003).
59. In 1991, a Community harmonised framework for the authorization, use and control of plant protection products was established. Under this system the European Commission evaluates specific active substances while Member States evaluate and authorise products/formulations containing such active substances. A common set of decision criteria and procedures for registering active substances and product formulations is used. The aim of the program is to develop a ‘positive list’ of active substances; substances not on this list will ultimately not be permitted for use in plant protection products within the EU.

60. The procedures for approval are such that it is leading to the withdrawal of large numbers of active substances and pesticide products has potentially significant implications for fruit and vegetable exporters and producers in Ghana. Some of the products currently used are ‘out-of-patent’ and generally lower cost pesticides for which the major agro-chemical companies have no interest in generating data for regulatory re-approval. In addition, most of the fruit and vegetables exported by Ghana do not represent large markets for these companies. The concern is that producers and exporters will face a much depleted and more costly range of options for managing plant pests and diseases on export crops.

61. In parallel to the review of approved active substances, the EU has made efforts to harmonise the levels of permitted pesticide residue levels in food products, including fresh fruit and vegetables, sold in the EU (Jaffee, 2003). Again test data must be generated in order to determine the acceptable residue levels, where there is insufficient data to establish an MRL, the ‘limit of determination’ (LOD) is applied as the limit. This means a zero level of an unapproved chemical residue.

62. If actually enforced, and this is dependent on the surveillance and testing programs of particular Member States, the new EU MRLs could have a significant impact on Ghanaian fruit and vegetable exports. There are many crop/pesticide combinations of interest to Ghanaian producers and exporters for which there are no international MRLs such that the LOD is likely to be applied. Where residues are detected, even of very low magnitudes and for approved uses, this could lead to the detention and withdrawal of the consignment from the market. On the one hand, even when applying GAP there is a chance that Ghanaian exporters would send consignments with pesticide residues in excess of official MRLs due to local agro-ecological conditions. On the other, the detection of any residues of chemicals for which there is no longer approved use in the EU, but which might be widely used in Ghana, would represent a breach of the official MRL.

63. The first observable impact in Ghana of the EU’s harmonized controls on pesticides occurred in 2001 when residues of ethephon, an active substance used to de-green pineapple before harvest, was found in fruit at levels exceeding the MRL. Whether incidences such as this reflect the implementation of a stricter MRL or simply that the regulatory authorities in Member States were more actively enforced long-standing pesticide controls – probably both – is a moot point. This specific case served to make the changes in the EU requirements on pesticides ‘real’ for Ghanaian producers and kick-started active efforts

---

2 The approval program provides for a rigorous set of environmental and human safety criteria, with data requirements matching or exceeding those needed for regulatory approval of pharmaceuticals and commodity chemicals (Jaffee, 2003). Agricultural chemical companies need to undertake or commission a broad array of tests on their active substances and submit extensive dossiers for these substances to be reviewed for re-registration. In the face of enormous costs for preparing dossiers and financing the review process, the major agro-chemical companies have re-examined their existing and prospective product portfolios and chosen to selectively defend existing active substances in accordance with commercial criteria. Inevitably this means that they have focused their efforts on defending active substances used for large crops and in major markets. This is leading to the withdrawal of large numbers of active substances from the current EU approved list.

3 Although there are provisions for an MRL to remain ‘open’ for a limited period of time while the required data are generated.
to enhance pesticide controls. Interestingly, these efforts centred not on the enhancement of regulatory oversight on pesticides (although this did occur to a limited degree), but the fruit and vegetable sectors’ engagement with EUREGAP; in this case the upgrading of a regulatory food safety standard induced the implementation of a private standard.

64. While the dominant underlying driver of controls on pesticides in the EU has been official regulatory requirements, the ultimate impact on Ghanaian producers has been amplified by the response of supermarket chains. Most notably, in a bid to protect their brand reputation, supermarkets have imposed private standards on their suppliers that specify allowable pesticides and MRLs (often near zero) in fresh fruit and vegetables, supported by more extensive programs of product surveillance. This has served to further erode the plant protection choices of producers and enhance the risk of consignment rejections. Indeed, exporters found to flout these standards can risk losing their ‘preferred supplier’ status, which may have required significant levels of investment in physical infrastructure and management systems to achieve.

65. An increasing requirement predominantly driven by the private standards of the major European supermarkets is traceability through the supply chain. Although EU legislation is being implemented that requires a certain degree of traceability, the speed and level at which traceability is being required reflects the need for supermarket chains, in particular, to be able to trace back products that are sold under their own brand name. In turn, such traceability enables the source of food safety and/or quality problems at the retail level to be easily and quickly identified, and for remedial action to be taken expeditiously. As these requirements have passed down the supply chain to supermarkets, producers of fruit and vegetables are being mandated to implement systems that permit the origin of consignments of produce to be identified (often down to the field plot) and provide information on date of planting, date of harvesting, etc. In turn, this permits enforcement of other private standards, for example on GAP and use of pesticides.

66. Finally, a fast emerging issue for Ghanaian exporters of fruit and vegetables is the implementation of good manufacturing practice (GMP) and HACCP in processing facilities. Although GMP and HACCP have already become the reality for exporters of processed products (predominantly cut pineapple and pineapple juice as in the case of Blue Skies – see Box 2) to the EU, these are generally ‘new’ issues for exporters of fresh produce that undergo only limited processing. The EU is implementing regulatory requirements for the implementation of GMP and HACCP in the processing of all food products, although the predominant driver, yet again, is the private standards of European supermarkets; the British Retail Consortium (BRC) standard in the case of the UK, International Food Standard (IFS) in the case of Germany and France, and Dutch HACCP Code in the case of the Netherlands (Henson, 2006). This is requiring the upgrading of the structure of packing facilities and implementation of new procedures for the handling of produce, record-keeping, etc.

67. The ability of Ghanaian exporters of fruits and vegetables to comply with these requirements, and to do so at a cost that at least retains international competitiveness, is dependent on prevailing levels of food safety and quality management capacity in both the public and private sectors. In this respect, Ghana generally lags behind many of its major competitors, for example Costa Rica in the case in pineapple and Kenya in the case of vegetables. Levels of capacity, however, are probably comparable to Côte d’Ivoire despite (or maybe because of) the dominance of French distribution channels for pineapple (Danielou and Ravry, 2005).

68. Development of standards and regulation of food safety and quality is the responsibility of the Food and Drugs Board and the Ghana Standards Board (GSB). The GSB establishes standards for all food products in Ghana. To date, it has promulgated more than 250 Ghanaian standards and adopted more than 3,000 international standards for certification purposes. Authority for enforcing standards for foods lies with the Food and Drugs Board. Both entities, however, have limited diagnostic capacity that limits their
ability to provide the necessary testing services to fruit and vegetable exporters and enforcement systems are weak and under-resourced. In many cases prevailing standards are outdated and, in practice, do not comply with international norms.

69. Control of pesticides, including approval and registration of products and licensing of pesticide importers and distributors, is the responsibility of the Environmental Protection Agency (EPA), with some delegation and/or cooperation with other government ministries, departments and agencies. For example, information on pesticide quality and residue analysis is the responsibility of the GSB and Ghana Atomic Energy Commission (GAEC). Indeed, both of these agencies have the power to veto the registration of a pesticide. In reality, however, existing controls are rudimentary and the actions of the producers are driven more by the norms of the private sector than effective public oversight. For example, there is confusion over which pesticides are approved and/or banned for use in Ghana, with multiple lists in circulation, including those of the EPA, GSB, EU, etc. This is one area that the HEII aims to address.

70. Although technical assistance has been provided to Ghana under the Pesticide Implementation Programme (PIP) of COLEACP, regulation of pesticide residues in food remains largely ineffective, with MRLs (where they exist) out of line with international and/or EU norms. Currently, there is no laboratory in Ghana that is accredited to undertake pesticide residue testing and, as a consequence, exporters must send samples to laboratories in other countries. Efforts are underway to upgrade the GSB laboratory as part of the HEII and implement enhanced procedures with a view to accreditation, although the necessary investments are significant and there are concerns about the longer-term sustainability of this capacity once established.

71. Overall, the public system of food safety and quality management in Ghana can be characterised as rudimentary, such that the private sector has made its efforts to by-pass weaknesses in official food controls. In some cases this is not possible; for example, the government is required to issue phytosanitary certificates for most export destinations that show conformity with plant pest and disease requirements. In others, the private sector has made investments and/or by-passed the lack of capacity locally by utilising expertise and/or facilities overseas. For example, many exporters routinely use laboratories in South Africa to undertake product, soil and/or worker blood tests for pesticide residues.

72. One of the most critical constraints facing fruit and vegetable exporters is the lack of an integrated temperature-controlled supply chain from production through to the point of export. Although a number of exporters have invested in improved packing facilities, the export facility at the international airport in Accra and the seaport in Tema are not specifically designed to handle fresh produce, are not temperature controlled and lack chilled storage. However, upgrading of the facility is underway in Tema and plans are included in the HEII for a new dedicated facility at the international airport.

73. The lack of chilled distribution not only impacts on the efficacy of food safety controls, it also compromises product quality and durability, and contributes to higher levels of waste than in competitor countries. For example, rates of spoilage by the time consignments reach the destination port remain unacceptably high and have an immediate impact on the exporter’s net margin; all costs incurred for production packing and shipping of wasted fruits are written off against the gross margin from the remaining produce. Typically, one box of wasted fruit cancels out the profit margin on five boxes of produce sold (Voisard and Jaeger, 2003). This Contrasts with Côte d’Ivoire, where the quality norm enforcement system for pineapples developed by the industry and contracted to a third party firm has significantly reduced non-conformity of produce and contributing significantly to exporter profit margins.

74. The implementation of an effective cold chain in the export supply chain for fruit and vegetables inevitably requires investment by either the public sector or the private sector on a collective basis. At least two of the leader Ghanaian exporters have invested in their own dedicated cold chains, but the high levels
of investment that are required are hard to justify given the current and realistic future value of exports. Indeed, there are potentially significant public good elements of such investments that justify public investment. Further, the actions of any one exporter are currently compromised by the lack of facilities at the ultimate point of departure that creates an effective break in the cold chain; the frequent delays at the air and sea ports mean that previously chilled product soon returns to ambient temperature.

75. Putting prevailing weaknesses in temperature control capacity along the supply chain, and in particular at the point of embarkation, aside, the dominant capacity issue in Ghana is the establishment and maintenance of production practices that are in compliance with food safety and quality standards in export markets, both today and in the foreseeable future. This is a challenge within the exporter’s own productive facilities, but even more so in those of their suppliers. The continued dominance of small-scale production in the supply chain for many export products (in part a product of the cost of land and prevailing mechanisms for the allocation of land) and the lack of any substantial capacity within MOFA’s extension service means that responsibility for organising and managing out-growers rests with exporters, often with support from donors. The managerial resources required to source from out-growers are increased significantly by the need to comply with exacting food safety and quality standards, most notably EUREGAP.

76. The export supply chain can be broadly sub-divided into two parallel sub-sectors according to prevailing standards of food safety and quality control in production (Table 6). At one extreme are leading or entrepreneurial exporters that supply the most exacting markets - predominantly European supermarkets - that have upgraded their pack-houses, implemented GAP (and may be EUREPGAP certified) and traceability and (where used) established codes of practice and effective control systems for out-growers. Also included in this group are the small number of processor-exporters such as Tongu farms (see Box 1) and Blue Skies (see Box 2). Although some further improvements are needed, for example implementation of HACCP in packing facilities, efforts are being on a continuous basis to enhance capacity and this sub-sector is broadly in compliance with the stricter food safety and quality requirements in Europe, and most notably the private standards of supermarkets.

77. At the other extreme there are ‘traditional’ exporters that have only rudimentary food safety controls, including poor pack-house facilities (at best) in which HACCP has not been implemented and there is little or no traceability along the supply chain. Generally, these exporters source (at least in part) from out-growers, and indeed many are not engaged in production themselves, maybe directly, through wholesale markets or via intermediaries, over which they have little or no control of production practices. Out-growers have generally received little or no training in GAP, pesticide use is not monitored and storage is often in makeshift installations, and there is no record-keeping (and thus no traceability). Most of the exporters in this supply chain supply lower-end wholesale markets. Currently, it is this sub-sector that predominates.
Table 6. Sub-sectors on fruit and vegetable export supply by levels of food safety and quality management capacity

<table>
<thead>
<tr>
<th>Leading/Entrepreneurial Firms</th>
<th>Traditional Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main markets</strong></td>
<td></td>
</tr>
<tr>
<td>Some penetration into UK supermarkets</td>
<td>Some penetration into smaller European supermarkets</td>
</tr>
<tr>
<td>Continental European supermarkets</td>
<td>European wholesale markets</td>
</tr>
<tr>
<td>European wholesale markets</td>
<td></td>
</tr>
<tr>
<td><strong>Nature of supply chain</strong></td>
<td></td>
</tr>
<tr>
<td>Larger integrated exporter-producers</td>
<td>Smaller integrated exporter-producers</td>
</tr>
<tr>
<td>Some use of out-growers</td>
<td>Widespread use of out-growers</td>
</tr>
<tr>
<td><strong>Food safety and quality capacity</strong></td>
<td></td>
</tr>
<tr>
<td>Implementation of GAP</td>
<td>Little or no implementation of GAP</td>
</tr>
<tr>
<td>EUREPGAP certification increasingly widespread</td>
<td>Little or no EUREPGAP certification</td>
</tr>
<tr>
<td>Improved pack-houses with HACCP in place or being implemented</td>
<td>Rudimentary pack-houses where these exist</td>
</tr>
<tr>
<td>Traceability through supply chain or in the process of implementation</td>
<td>Little or no traceability through supply chain</td>
</tr>
<tr>
<td>Generally effective controls on use of pesticides</td>
<td>In general only limited control on use of pesticides</td>
</tr>
<tr>
<td>Codes of practice and controls on out-growers, where used</td>
<td>Little or no control on out-growers</td>
</tr>
</tbody>
</table>

78. Considerable external assistance has been provided to upgrade food safety and quality control capacity in both the private and public sectors as a means to support the promotion of fruit and vegetable exports. For example, USAID’s TRIP (see above) has supported producers and exporters in complying with EUREPGAP (see below). This has included training and financial support to cover auditor fees. In parallel, the German Technical Cooperation Agency (GTZ) has also supported the Plant Protection and Regulatory Services Directorate of MOFA in the provision of training farmers to meet EUREPGAP requirements. In some notable cases this support has clearly had a significant impact. For example, the first exporter certified to EUREPGAP in Ghana was Blue Sky Products (see Box 2), including group certification of 18 of its out-growers. Subsequently, over 100 producers or producer groups have been certified to EUREPGAP in Ghana, most of which are engaged in pineapple production. Indeed, at the current time it is estimated that over 40% of pineapple exporters are EUREPGAP-certified.

79. It is evident that major advances have been made in recent years to upgrade food safety and quality management capacity in fruit and vegetable production, although prevailing capacity remains weak in comparison with major export competitors. The leading and larger exporters have engaged independently in their own programmes to implemented enhanced food safety and quality controls. These initiatives have been driven by the will (and need) to compete internationally and to gain access to higher-value and growing markets, most notably those of the European supermarkets. Most of these efforts have centred on gaining EUREPGAP certification, predominantly for pineapple production. These leading exporters, however, still suffer from external weaknesses, for example in public testing capacity and the lack of appropriate facilities at the air and sea port.

80. Smaller and less progressive exporters are generally informed about the need to enhance food safety and quality management systems and efforts have been made to upgrade capacity, often driven by the activities of industry organisations such as FAGE and NAG, and with donor support. However, progress has generally been slow, mainly because these exporters are still able to access wholesale markets that have less exacting standards. The lack of motivation to make the required investments to upgrade capacity is further exacerbated by the cost and practical difficulties of achieving traceability and GAP in supply chains pervaded by small-scale producers.

81. Across the sector as a whole, and putting the leading and more entrepreneurial exporters aside, there is an evident lack of leadership among key stakeholders to upgrade food safety and quality capacity. This is reflected in the lack of industry-wide norms, as might be seen through industry codes of practice;
the Fresh Produce Exporters association of Kenya (FPEAK), for example, has a code of practice which establishes clear domestic industry standards that are based on private standards in export markets. Indeed, the need and scope for industry leadership has arguably been confounded by the level and scope of NGO and donor involvement in the sector. While industry organizations have been active in promoting enhanced standards, their activities have been very much driven by external donors and the scope of these activities remains piecemeal. A cultural shift is needed based on the collective need to enhance food safety and quality capacity around self-governance and benchmarking that is self-sustaining regardless of the activities of government; this is certainly the lesson from Kenya (Jaffee, 2003) and is highly instructive in the Ghanaian case.

82. A secondary impact of the reliance on external support for upgrading of food safety and quality capacity is the reliance on external expertise and services, which is often necessitated by donor policies. As a result, there has been a failure to develop the required domestic capacity, meaning that exporters have to import the required services, often at greater cost than would be the case if such services were available locally.

6. Impact of private food safety and quality standards:

83. It is evident that the predominant driver behind the upgrading of food safety and quality management capacity in Ghana has been the private standards of European supermarkets. Indeed, at the current time there is little evidence that the evolving supermarket sector (including the South African supermarket chain Shoprite) are implementing food safety standards beyond legal requirements, and even the latter are not rigorously enforced. Indeed, the predominant focus of the evolving supermarket sector is continuity of supply and quality management, aimed at maximizing shelf-life and reducing wastage. Evidence in other developing countries (see for example Reardon et al., 2001; Henson and Reardon, 2005), however suggests that this is likely to change over time and that the distinction between the food safety and quality standards of export and domestic markets will become more blurred.

84. This section focuses on those exporters (and their supply chains) that have made attempts to comply with such standards. While this focus largely excludes the majority of exporters and producers, it serves to highlight the processes of compliance with private standards and the impacts on producers and/or exporters that make efforts to upgrade food safety and quality capacity.

Product and process requirements:

85. The interviews highlighted how compliance with the private food safety and quality standards of European supermarkets, alongside the regulatory requirements of the countries in which those supermarkets operate, is a critical factor in establishing and maintaining supply relations, as detailed in Table 5. Indeed, leading exporters/producers tended to describe their market position and competitiveness in terms of their ability (and the associated costs) of complying with the standards laid down by their customers relative to domestic competitors. Those exporters supplying the most exacting markets, which were universally recognized to be UK supermarkets, also made reference to their ability to comply compared with competing exporters in other countries. Almost universally, the most difficult standards to comply with were associated with production methods, most notably GAP, especially where exporters derived a significant proportion of their fruit and vegetables from out-growers. The related challenges were seen as not only achieving compliance, but maintaining standards and, in particular records and oversight, in the medium and long term.

86. Among the exporters/producers interviewed, the specific private standard that was routinely referenced was EUREPGAP. While it was recognized that it was still possible to supply most markets without EUREPGAP certification, the most exacting buyers (UK and some continental supermarkets) were
increasingly requiring compliance among their suppliers. Indeed, almost universally, EUREPGAP was
seen as the ‘golden standard’ to which the entire industry had to aspire. Although some references were
made to other standards, for example the British Retail Consortium (BRC) Technical Standard and
International Food Standard (IFS), these were the exception rather than the rule. Social accountability
was seen to be an emerging challenge, with some exporters/producers aware of the UK’s Ethical Trading
Initiative as a ‘luring threat’.

87. Perspectives on compliance with private food safety and quality standards, however, differed
across the exporters and producers interviewed. In the case of exporters/producers that did not have
established relations with supermarket buyers, compliance with food safety and quality standards was seen
as a condition and cost of entry; a ‘hill’ that had to be scaled in order to gain access to lucrative markets on
the ‘other side’. In the case of established suppliers to European markets, compliance within a buyer-
defined period of time, or at least being able to show evidence of concerted efforts towards compliance,
was recognized to be a condition of continued supply. Further, there was seen to a need to ‘keep’ up with
the seemingly ever changing demands of buyers in terms of quality, safety, logistics, etc. While it was
recognized that supermarket buyers aimed to establish ‘preferred supplier’ relations with fruit and
vegetable exporters as a means to manage the transaction costs their incurred in procurement, and this was
seen as the ‘ultimate standard’ for exporters to achieve, it was recognized that buyers did not hesitate to
drop even their preferred suppliers if a record of ‘unreliability was established.

88. Compliance with private food safety and quality standards, however, was only one of a multiple
set of requirements that needed to be satisfied by exporters/producers in order to supply European
supermarkets. Suppliers were also expected to have the capacity to meet orders that could vary in
magnitude on a day-to-day basis and to ensure consignments reached their destination within a prescribed
time window. This required that exporters had the necessary logistical capabilities themselves, or could
access these from external providers, as well as the means to communicate with buyers as and when
required. In choosing their suppliers, supermarket buyers aimed to minimize their costs of procurement
among the portfolio of firms that were able to meet their food safety, quality and other requirements on a
consistent basis. Thus, exporters needed to be able to comply with their buyer’s requirements in a cost-
effective manner; the nature of private food safety and quality standards is that they define a minimum
quality to which suppliers were required to conform rather than being per se the basis of any competitive
advantage. It was generally recognized that market competitiveness was built on a host of other factors,
including price, value-addition, innovativeness, etc.

89. Among the interviewed exporters/producers the greatest challenges in achieving compliance with
food private food safety and quality was the up-front investment in infrastructural and capacity up-grading.
This was a particularly major obstacle for smaller firms, although in absolute terms the investments
required were often relatively limited. Such investments were considered risky; there was no guarantee that
exporters would be able to gain or retain access to more lucrative export markets even once compliance
had been achieved. In addition access to the required capital was difficult; often the banks were reluctant to
loan funds for a project that was seen as risky and which was unlikely to bring about a significant increase
in market returns in the short to medium term, thus increasing the likelihood of a loan default. The
interviewees also highlighted prevailing weaknesses in public and private infrastructure external to their
firm, including certification and testing capacity, cold storage facilities, etc. Further, there are no food
safety and/or quality schemes in Ghana that codify the private standards of major export markets. Thus,
most exporters/producers made use of services from other countries, including testing services from South
Africa and certification from Europe.

90. In the case of out-growers, private food safety and quality standards in export markets were
generally codified into exporter standards. Thus, although out-growers were aware of EUREPGAP, for
example, unless they were actually certified they had quite limited knowledge on what would be required
to comply. Universally among the out-growers interviewed, the drive to comply with private food safety and quality standards had come from the exporters supplied. Where the out-grower has upgraded their food safety or quality management capacity, and in some cases also achieved EUREPGAP certification, the greatest challenges had been associated with funding up-front investments and recognizing the reasons for making to changes to well-established production practices that had ‘served them well’ for many years.

91. The competitiveness of Ghanaian fruit and vegetable exporters in complying with the private food safety and quality standards of their more exacting customers was influenced by a range of capacities and resources both internal and external to the firm (Table 7). It was widely recognized among leading exporters that, to the extent that access to these capacities and resources lagged behind major competitors (for example major exporting firms in Kenya or Côte d’Ivoire), they were unlikely to be able to be able to compete in the longer term. As described above, some leading exporters had attempted to bridge or by-pass weaknesses in prevailing external capacity, for example by using foreign laboratory testing services or establishing their own chilled storage facilities. However, this had put them at a cost disadvantage relative to their competitors that had translated into lower margins. Further, both this cost disadvantage and weaknesses in internal capacities and resources had confounded efforts to enter potentially more lucrative, but also more exacting, supply chains, for example the UK supermarkets. Indeed, it was evident that significant capacity development was needed in broad infrastructure and support services, over which the industry (at least at the level of individual firms) had little control, or at least was not prepared to take leadership over.

92. Broadly, the interviewed exporters/producers and out-growers were not satisfied with their existing food safety or quality management capacity. It was evident that, once interviewees had started ‘on the road’ to enhanced capacity, they began to recognize additional elements of their operations that needed upgrading. Indeed, supplying more exacting markets was seen as getting on to a ‘never ending road of improvement’. Key prevailing weaknesses included hygiene controls (notably the implementation of HACCP) in packing facilities, maintaining traceability systems and associated record-keeping systems, and (in the case of exporters sourcing from out-growers), keeping control of their supply chain. The larger leading exporters/producers were generally making efforts to address these capacity concerns, while smaller exporters/producers had often been confounded by lack of access to capital or had become overwhelmed with the need to continuously upgrade what they were doing. In most cases, prevailing weaknesses in capacity were not seen as compromising existing export markets, reflecting the fact that few of the interviewees were currently supplying the most exacting customers, provided they could show efforts towards compliance and continuous improvement over time. At the same time, however, there were concerns that such weaknesses compromised competitiveness relative to leading exporters in other countries.
Table 7. Level of capacities and resources in among leading Ghanaian exporters to comply with private food safety and quality standards:

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production capacity</td>
<td>Transportation infrastructure</td>
</tr>
<tr>
<td>GAP implementation</td>
<td>+</td>
</tr>
<tr>
<td>Pesticide controls</td>
<td>Communications infrastructure</td>
</tr>
<tr>
<td>Hygiene controls post-harvest</td>
<td>Laboratory testing capacity</td>
</tr>
<tr>
<td>Quality management/control</td>
<td>Official certification capacity</td>
</tr>
<tr>
<td>Cold chain capacity</td>
<td>Private standards certification capacity</td>
</tr>
<tr>
<td>Supply chain traceability</td>
<td>Industry coordination/leadership</td>
</tr>
<tr>
<td>Managerial capacity</td>
<td>Consultancy services</td>
</tr>
<tr>
<td>Innovative capacity</td>
<td>Training services</td>
</tr>
<tr>
<td>Research &amp; development</td>
<td>Research &amp; development</td>
</tr>
<tr>
<td>Extension services</td>
<td>Policy environment</td>
</tr>
</tbody>
</table>

Key: +: Better than leading competitors
0: Same as leading competitors
-: Worse than leading competitors

93. Almost universally, respondents highlighted the weakness of public infrastructure, both in general and specific to the fruit and vegetable sector. Thus, leading exporters and their suppliers had generally received very little support, in the form of advice and finance, from MOFA, GEPA, etc. In most cases this gap had been filled, at least in part, by donor-funded programs, although there were cases where respondents had been ‘left in the lurch’ when donor-funded projects had come to an end while compliance with food safety or quality requirements was still in progress. In some cases, the process of capacity-building came to an abrupt end at that point, or at least was delayed while alternative support was secured.

94. Thus, it was evident that the dominant private food safety standard pervading the fruit and vegetable export sector in Ghana is EUREPAGAP. Currently, around 100 exporters have achieved certification, for their own production facilities and/or their community of out-growers through group certification. To date, certification has largely occurred in pineapple production, although efforts are being made for other export crops, for example chillies and bananas. Box 2 provides an in-depth case study of Blue Skies as illustration of the process of EUREPAGAP implementation and certification, based on Gogoe (2003) and exporter and producer interviews undertaken as part of the current study. Further, attempts were made to identify the specific changes made in order to implement EUREPAGAP more widely and the associated costs.

95. The experiences of Blue Skies and the interviews undertaken as part of this case study more generally, suggest that investments have been made in the upgrading of production facilities and implementing new agronomic and managerial practices. Non-recurring costs of implementing EUREPAGAP included the installation of chemical stores, toilets, changing and washing facilities, upgrading of pack-houses, testing equipment, litter and chemical disposal, etc. Among the interviewees, including producer-exporters and out-growers, these non-recurring costs ranged from USD 450 to USD 510 in the case of out-growers supplying exporters with 15 to 20 acres, to US$75,000 to USD $100,000 in the case of integrated producer-exporters with 1 000 to 1 8000 acres (Table 8).

96. The non-recurring costs of compliance with EUREPAGAP represented a significant up-front investment and undoubtedly acted as an absolute constraint to EUREPAGAP compliance within a significant sub-sector of the industry (see below). However, as a proportion of the value of sales these costs were actually quite small. Figure 7 presents the non-recurring costs reported in Table 8 as a proportion of the value of sales over the two year period 2003-2004; the interviews suggested that the period of time between starting the process of compliance and achieving certification was around two years. Among small out-growers, that only have to make investments at the production level, non-recurring costs represented less than two% of sales. In the case of integrated producer-exporters, however, there were very significant
economies of scale; non-recurring costs among smaller producer-exporters were six to 11% of sales, while among medium and large-scale producer-exporters they were consistently less than four% of sales.

97. The significant economies of scale for integrated producer-exporters associated with the non-recurring costs of compliance with EUREPGAP had produced a profound impact on the structure of the leading exporter sector in Ghana. Undoubtedly, some medium-sized producer-exporters had struggled to meet the up-front investments required, and indeed had found it difficult to finance these investments through bank loans or other means. Indeed, informal discussions with exporters outside of the main series of interviews suggested that there were a number of exporters in this category that had not managed to achieve compliance. In turn, this was driving the consolidation of the sector such that there was growing dominance of a small number of large integrated producer-exporters, which often also sourced from out-growers.

98. The recurring costs of compliance with EUREPGAP consisted of annual certification fees, operation of record-keeping systems, on-going staff and/or out-grower training, soil, produce and blood testing for pesticide residues, calibration of chemical sprayers, etc. In generally, these costs were relatively modest, especially as a proportion of the value of annual sales (generally less than 1%) and there was no evidence of significant economies of scale (Table 8). At the same time, however, margins in exports of fruit and vegetables to the lower price markets that most of the interviewees supplied generally fulfilled were limited and even these modest recurring costs compromised the viability of some markets. Further, it was clear that these recurring costs could have been reduced quite significantly if local certification capacity was available rather than needing to rely on certifiers from Europe or South Africa.

99. Alongside the recurring costs of maintaining EUREPGAP certification, it was evident from the interviews that the impact on production costs needed to be considered. Among most of the producers/exporters interviewed, production costs had actually diminished, in some cases significantly so, as a direct result of implementing EUREPGAP (Table 8), or more specifically GAP. This is further substantiated by the in-depth case study of Blue Skies presented in Box 2. These reductions in cost emanated predominantly from the more expeditious use of pesticides and other chemical inputs, but also more general improvements in agronomic practices, better monitoring of crops, record-keeping, on-going assessment of performance, etc. Further, these reductions in production cost had generally been accompanied by improvements in product quality as a direct result of enhanced monitoring through the
production cycle. In many cases these quality improvements had been accompanied by high farm-gate prices, or at least the ability to access more reliable post-harvest markets.

100. The overall picture painted by the analysis of costs associated with EUREPGAP implementation suggests that producers and exporters had derived a net benefit, simply in terms of total production costs, that was over and above achieving a price premium from having more rigorous food safety and/or quality controls in place. Indeed, the interviews with exporters/producers highlighted the ways in which EUREPGAP, or perhaps more generally the implementation of good agricultural practices, had improved their business in terms of the efficiency of their farming operation. Thus, interviewees spoke about ‘being more in control’, ‘knowing what to do, and what not to do’, ‘being up with current thinking’, etc. They also recognised that they themselves and their workers were less exposed to pesticides and other chemical inputs.

Table 8. Costs of EUREPGAP certification in fruit and vegetable production in Ghana

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Type of Operation</th>
<th>Export Products</th>
<th>Size (Acres)</th>
<th>Sales (USD)</th>
<th>Non-Recurring Costs (USD)</th>
<th>Recurring Costs (USD /Year)</th>
<th>Unit Production Costs (% change)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Out-grower</td>
<td>Pineapple</td>
<td>20</td>
<td>20 000</td>
<td>450</td>
<td>50</td>
<td>-10%</td>
</tr>
<tr>
<td>B</td>
<td>Out-grower</td>
<td>Vegetables</td>
<td>15</td>
<td>14 500</td>
<td>510</td>
<td>60</td>
<td>-8%</td>
</tr>
<tr>
<td>C</td>
<td>Out-grower</td>
<td>Pineapple</td>
<td>18</td>
<td>17 000</td>
<td>500</td>
<td>65</td>
<td>-10%</td>
</tr>
<tr>
<td>D</td>
<td>Out-grower</td>
<td>Pineapple</td>
<td>60</td>
<td>80 000</td>
<td>18 000</td>
<td>3 000</td>
<td>-3%</td>
</tr>
<tr>
<td>E</td>
<td>Producer-exporter</td>
<td>Vegetables Mango Papaya Pineapple</td>
<td>240</td>
<td>350 000</td>
<td>55 000</td>
<td>5 000</td>
<td>+2%</td>
</tr>
<tr>
<td>F</td>
<td>Producer-exporter</td>
<td>Pineapple</td>
<td>400</td>
<td>550 000</td>
<td>65 000</td>
<td>5 000</td>
<td>-5%</td>
</tr>
<tr>
<td>G</td>
<td>Producer-exporter</td>
<td>Pineapple Bananas</td>
<td>800</td>
<td>650 000</td>
<td>50 000</td>
<td>8 000</td>
<td>+3%</td>
</tr>
<tr>
<td>H</td>
<td>Producer-exporter</td>
<td>Pineapple vegetables</td>
<td>550</td>
<td>600 000</td>
<td>70 000</td>
<td>6 000</td>
<td>-6%</td>
</tr>
<tr>
<td>I</td>
<td>Producer-exporter</td>
<td>Pineapple vegetables</td>
<td>1 000</td>
<td>1 200 000</td>
<td>80 000</td>
<td>12 700</td>
<td>-5%</td>
</tr>
<tr>
<td>J</td>
<td>Producer-exporter</td>
<td>Pineapple</td>
<td>1 500</td>
<td>1 400 000</td>
<td>75 000</td>
<td>13 000</td>
<td>-4%</td>
</tr>
<tr>
<td>K</td>
<td>Producer-exporter</td>
<td>Pineapple</td>
<td>1 800</td>
<td>1 600 000</td>
<td>100 000</td>
<td>10 500</td>
<td>-1%</td>
</tr>
</tbody>
</table>
Box 2. Costs and benefits of EUREPGAP certification:

Blue Skies Ltd started production of processed tropical fruits in 1998, motivated by consumer demand for fresher and riper prepared fruit. The factory is situated in Eastern Ghana where tropical fruit grows the year round and only 35 kilometres from Accra international airport, which is serviced by a number of major European airlines. The factory employs 250 people who hand-prepare, assemble and pack the fruit, which is flown daily to retailers and wholesalers in the UK including many of the major supermarket chains. The total lead-time is around 12 hours. Throughout, Blue Skies ensures that the product is kept at or below 5°C through the use of refrigerated transport, temperature-controlled holding facilities at the airport and thermally-insulation packaging.

Pineapple is sourced from farmers under contract that range in size from small-holders to large commercial farms. All of these farmers, regardless of size, follow a code of conduct based on GAP and social responsibility. Blue Skies has developed close linkages with partners that provide assistance to farmers and other in the form of agricultural education and advice, and a reliable transport and logistic infrastructure. Blue Skies operates as a Produce Marketing Organisation (PMO), with specific farmers allocated to a particular crop. In November 2001, it achieved EUREPGAP certification, a move that was aimed at maintaining its UK market share and demonstrating ‘due diligence’. This certification now covers 18 growers. The total cost of achieving this is estimated by the company to be around USD 93,000.

Perhaps out of necessity rather than benevolence, Blue Skies has had to work with small-scale producers as part of its efforts to implement and maintain EUREPGAP certification. To date, Blue Skies has supported 18 farmers, most of which are small-holders, while they become EUREPGAP compliant. This has included the provision of technical advice and financing the EUREPGAP audit costs.

Implementation of EUREPGAP imposed significant costs on these 18 farmers including capital investments, additional labour requirements and greater managerial inputs (Elzakker, 2001). Overall, the associated non-recurring costs increased mean fixed production costs per acre by 7.8% (Table 9). Producers were required to invest in constructing and up-grading physical structures, such as toilets and baths, chemical storage and offices. These costs were a major hurdle that had to be overcome in order to achieve compliance. Four producers had to take out loans, although the majority of the farmers were able to finance these improvements out of their own resources. Indeed, many (especially smaller) producers were forced to rely on their own financial resources because they were unable to secure a loan. Although these producers requested that Blue Skies act as their guarantor, they were unable or unwilling to do so.

In an attempt to offset the increase in fixed costs, a number of producers increased their land area under pineapple. Indeed, Blue Skies increased their order from many of the 18 producers in a bid to offset the increase in fixed costs. Although producers faced significant costs from leasing and/or buying land in the face of escalating prices, these were partly offset by the decline in costs of tools and consumables despite the fact that protective clothing had to be purchased for the application of pesticides. This decline in consumables and tools reflects the application of more efficient management alongside the expansion of farm operations to a more optimal operational size.

Perhaps contrary to expectations, the implementation of EUREPGAP reduced the variable costs of production of pineapple across all growers, by an average of 3.5% (Table 10). This almost entirely reflects the significant reduction in both the quantity and unit price of agrochemicals. For example, following the implementation of EUREPGAP, farmers used small quantities of generally cheaper weedicides alongside increased manual weeding. Thus, overall weed control costs declined by 5.4%. Changes in the usage of fertilizers and pesticides/fungicides, employing these chemicals together as an admixture rather than on separate occasions, reduced fertilizer costs by 9.4%, although this partially offset by a marginal increase in pesticide costs.

In the case of harvest costs, which declined by 6.6%, there was a significant reduction in the use of Ethepon for de-greening of fruit. Other cost reductions included land/seeding preparation, mechanisation and (perhaps surprisingly) supervision. A major factor here was that the time spent in supervising farm operations was used more effectively, leading to a decline in the overall amount of time needed to direct farm operations. These cost savings were, however, partially offset by the need to adopt new production practices that involved additional labour. In particular, the EUREPGAP protocol requires that the pineapple plant is removed immediately post-harvest to prevent the spread of pests and diseases. Whereas this might be expected to result in reduced pesticide use in the longer term, immediately it increased production costs. Further, the protocol requires greater attention to the welfare of workers, leading to a significant increase in medical expenses.
Overall, the decline in variable costs of production as a result of EUREPGAP implementation in the 18 farms was largely offset by the increase in fixed costs, such that overall production costs only declined 0.4%. There was no appreciable change in yields as a result of the induced changes in production practices and unit production costs declined by 2.8%. However, combined with improvements in the quality of fruit, the reduction in production costs generated an increase in the profitability of pineapple production by 7.8%. Taking account of other income-generating activities, in particular the decline in sale of suckers, overall income increased on average by 3.2%.

Producers were generally aware that the implementation of EUREPGAP enhanced the security of their access to export markets and confirmed and improved their long-term relationship with Blue Sky Products. Indeed, they saw great value in being part of a ‘select’ and pioneering group of producers. Blue Skies was seen, by the small-scale producers in particular, as providing an extremely valuable market with premium prices and regular and timely payments. On the basis of this security, these growers had been willing to make the necessary investments to implement EUREPGAP. Indeed, Blue Skies subsequently increased their orders from these growers and sourced pineapple preferentially from these producers.

Alongside the direct financial returns from compliance with EUREPGAP, producers have highlighted a number of wider benefits (Figure 8), including increased awareness of agrochemical handling practices and improvements in general conditions of hygiene and cleanliness on the farm. Although many of the smaller producers had previously worked on a commercial farm and generally copied their practices, their knowledge of hazardous agrochemicals and the potential impacts on humans and the environment was limited. Under EUREPGAP, agrochemicals are stored and handled by trained individuals and many farmers and their workers felt that their welfare was being better protected. Likewise, the producers had installed disposal pits for the waste generated on the farm, toilets, baths and hand-washing facilities, generally enhancing standards of hygiene. Enhanced morale of farm workers and the ability to spend longer and, what was perceived to be, better quality time on the farm, were further benefits noted by many of the producers.

The case of Blue Skies illustrates that there are considerable fixed costs associated with the up-grading of facilities and production procedures in order to comply with the EUREPGAP protocol and that these can be a major constraint for small-scale producers in particular. However, once implemented, EUREPGAP significantly reduced the variable costs of production for pineapple such that total production costs decline, due in particular to more selective use of agrochemicals. Although there were no appreciable changes in yields as a result of the changes in production practices, both profits from pineapple production and overall farm incomes increased.

Producers have benefited from improvements in the overall management of production, more secure and longer-term relations with their major buyer, in this case Blue Skies and continued participation in potentially lucrative export markets. There were also wider benefits, for example through better knowledge of the handling of agrochemicals and hygiene. The overall picture is that, given the right economic inducements and support, small-scale producers can indeed comply with strict standards such as EUREPGAP in a manner that yields longer term benefits. While these 18 farmers would undoubtedly have not been able to implement EUREPGAP without support from Blue Skies they responded by investing in land to reap economies of scale in compliance and the enhanced opportunity to supply Blue Skies with pineapple produced under EUREPGAP.

The findings of this case study, to a large extent, clarify the potential benefit for small-scale farmers from the implementation of GAP, rather than EUREPGAP in particular. Although the benefits of EUREPGAP certification in terms of continued access to markets supplying European supermarkets are undoubtedly significant, it is not evident that the more direct impacts on production costs are specific to EUREPGAP. Indeed, it is reasonable to expect that the observed changes in production practices, in particular associated with use of agro-chemicals, would be largely derived from adherence to GAP more generally. At the same time, however, it does appear that the pressure to comply with EUREPGAP through Blue Skies was a major impetus for the upgrading of agricultural production practices, and indeed the technical support provided by the exporter was instrumental in overcoming the challenges faced by the smaller producers. Although there were clearly significant benefits from doing so, it is not evident that these farmers would have otherwise implemented GAP.

Source: Gogue

101. In view of the benefits of EUREPGAP, the question is why a greater number of Ghanaian producers and producer-exporters are not in the process of compliance? The interviews suggested that there are two potential reasons. Firstly, many exporters/producers acknowledged that they had not predicted the benefits of implementing GAP in general, and achieving EUREPGAP certification in particular. Indeed, EUREPGAP appears to be an example of regulatory induced innovation, as put forward
by Michael Porter (Porter, 1991; Porter and van der Linde, 1995), although in this case such innovation is induced by the need to comply with private standards rather than regulatory requirements. Secondly, the non-recurring costs of implementing EUREPGAP are undoubtedly a major constraint, as described above; indeed, many of the interviewees that had achieved EUREPGAP certification acknowledged that they would not have been able to implement the up-front changes that were required unless assistance had been provided by the exporter they supplied (in the case of out-growers) and/or donors.

102. Some of the greatest challenges in upgrading food safety and quality capacity were observed among smaller out-growers. From the perspective of exporters, small-scale producers predominantly had a production rather than a market focus, and a high degree of cultural change was needed in order to build supply relations and capacity on a sustainable basis. Further, the inducement (and often also the facilitation) to upgrade food safety and quality controls had generally come from the exporters themselves, or from donors and/or NGOs, rather than within the out-grower sector itself. Such interventions, however, had often failed to address the more fundamental constraints faced by smaller producers, including low levels of numeracy and literacy, access to land, inefficiencies in the supply of inputs, transportation problems, limitations in access to credit, etc. Both the exporters and out-growers interviewed in the study recognized these issues to be more fundamental constraints than compliance with enhanced food safety and quality standards. Indeed, the sentiment was often expressed that, in the face of these more pervasive problems, there may be little or nothing to be gained from upgrading agronomic practices in order to comply with exporter standards.

### Table 9. Mean Unit Fixed Pineapple Production Costs Pre and Post Implementation of EUREPGAP (USD per acre)

<table>
<thead>
<tr>
<th>Cost</th>
<th>Pre- EUREPGAP</th>
<th>Post- EUREPGAP</th>
<th>Mean Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Land</td>
<td>7.2</td>
<td>7.4</td>
<td>0.2</td>
<td>2.7</td>
</tr>
<tr>
<td>Tools and Consumables</td>
<td>116.7</td>
<td>101.1</td>
<td>-15.6</td>
<td>-13.4</td>
</tr>
<tr>
<td>Interest Payments</td>
<td>77.6</td>
<td>80.4</td>
<td>2.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Loan Repayment</td>
<td>50.1</td>
<td>52.2</td>
<td>2.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Depreciation on Building</td>
<td>7.4</td>
<td>32.0</td>
<td>24.6</td>
<td>332.4</td>
</tr>
<tr>
<td>Maintenance</td>
<td>0.2</td>
<td>6.3</td>
<td>6.1</td>
<td>3,050</td>
</tr>
<tr>
<td>Total Fixed Costs</td>
<td>259.2</td>
<td>279.4</td>
<td>20.2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Source: Gogoe (2003)

103. While there did appear to be very real benefits from implementing enhanced food safety and quality controls, as in the case of EUREPGAP, other constraints were constraining the efforts of some exporters/producers to capitalize on the associated investments through access to higher value markets. In particular, the slow rate of investment in new varieties (for example MD2 in the case of pineapple), lagging behind shifts in consumer tastes, and compromises in product quality due to poor roads and other logistical infrastructure clearly limited the ability of exporters to meet the needs of both existing and potential higher-value European customers. These problems were seen as reflecting lack of pro-activity and investment on the part of government, although at the same time it was recognized that the industry needed to take more leadership in addressing the constraints it faced.

104. The lack of any established Ghanaian product brands, with frequent comparison to Kenya and Côte d’Ivoire, was seen by many interviewees as limiting their ability to capture the extra value they had been created through investments in enhanced food safety and/or quality capacity. Indeed, a number of the interviewees had clearly been in some financial difficulty during the last one to two years and, in the absence of external financial support, may have not survived. This suggests that a more holistic view needs to be taken of upgrading food safety and quality capacity to include more fundamental elements of
agronomic capacity, as well as logistical and other elements of the supply chain and marketing/branding efforts. Although some project-based initiatives are moving in this direction (for example TIPCEE), there is undoubtedly a need more generally for fully-integrated approaches to the enhancement of export competitiveness and capacity.

Table 10. Mean Unit Variable Pineapple Production Costs Pre and Post Implementation of EUREGAP (USD per acre)

<table>
<thead>
<tr>
<th>Cost</th>
<th>Pre-EUREGAP</th>
<th>Post-EUREGAP</th>
<th>Mean Change</th>
<th>%age Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Material</td>
<td>248.7</td>
<td>251.4</td>
<td>2.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Planting Suckers</td>
<td>20.4</td>
<td>20.6</td>
<td>0.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Weed Control</td>
<td>101.5</td>
<td>96.0</td>
<td>-5.5</td>
<td>-5.4</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>154.4</td>
<td>139.8</td>
<td>-14.6</td>
<td>-9.4</td>
</tr>
<tr>
<td>Pesticides/ Fungicides</td>
<td>13.1</td>
<td>13.3</td>
<td>0.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Forcing/ Flower Initiation</td>
<td>26.4</td>
<td>26.7</td>
<td>0.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Seedbed/Land Preparation</td>
<td>46.4</td>
<td>41.5</td>
<td>-4.9</td>
<td>-10.5</td>
</tr>
<tr>
<td>Harvesting</td>
<td>171.0</td>
<td>159.6</td>
<td>-11.4</td>
<td>-6.6</td>
</tr>
<tr>
<td>Sucker Production</td>
<td>80.9</td>
<td>81.1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Removal of Old Crop</td>
<td>2.6</td>
<td>15.2</td>
<td>12.6</td>
<td>485</td>
</tr>
<tr>
<td>Mechanisation</td>
<td>267.3</td>
<td>243.3</td>
<td>-24.0</td>
<td>-8.9</td>
</tr>
<tr>
<td>Supervision</td>
<td>240.1</td>
<td>219.7</td>
<td>-20.4</td>
<td>-8.4</td>
</tr>
<tr>
<td>Medical costs</td>
<td>1.5</td>
<td>16.4</td>
<td>14.9</td>
<td>993</td>
</tr>
<tr>
<td>Total Variable Costs</td>
<td>1,374.0</td>
<td>1,324.6</td>
<td>-49.4</td>
<td>-3.5</td>
</tr>
</tbody>
</table>

Source: Gogoe (2003)

105. The predominant focus of the interviews with exporters and out-growers was on leading export supply chains that are supplying European supermarkets, and that have successfully complied with the associated private food safety and quality standards. However, a parallel informal series of interviews was undertaken with exporters and producers that are supplying wholesale markets and other less sophisticated supply chains. These more traditional exporters were facing a significant barrier to the upgrading of their supply chains and export businesses because of the costs of compliance with private food safety and quality standards, most notably EUREGAP. Indeed, many could not picture any situation in which they could comply with such requirements, banishing them to lower priced markets for which the profitability of exports was marginal, at best. Thus, putting the leading exporters aside, the predominant impact of private food safety and quality standards would appear to be the exclusion of large parts of the export supply chain in Ghana from higher value and faster growing European markets.

Information and communication on standards:

106. Although it was acknowledged that a number of awareness-raising efforts had been held in Ghana, often with donor assistance and coordinated by industry organisations (for example FAGE), the main channel through which exporters keep abreast of private food safety and quality standards was routine communication with their customers. Typically, this information was transmitted by email, or in-person at routine meetings with customers and/or their auditors. Indeed, there was little or no evidence from the interviews of concerted and coordinated efforts on the part of government to monitor food safety and quality standards in export markets and to communicate these to exporters. Discussions with policy officials at MOFA and MOTI largely substantiated this view; much of the action of government is focused on broader policy directions and ‘putting out fires’ when problems arise. Further, although it was acknowledged that industry organizations such as FAGE did make efforts to keep abreast of emerging
standards, some of the larger producer/exporters were of the view that this organization lacked the resources required to collect and disseminate such information on a timely basis.

Figure 8. Proportion of Pineapple Producers Experiencing Benefits from Compliance with EUREPGAP Protocol

Source: Source: Gogoe (2003).

107. Among the exporters/producers interviewed there was little or no distinction between the private standards of their customers and regulatory requirements. All were subsumed within the broad category of ‘customer requirements’. Thus, at times there was confusion over whether EUREPGAP was an EU Directive or something required by the major supermarkets? In some cases the food safety and quality standards that exporters/producers were required to comply with were compiled into a manual, while in others they came as a ‘string of communications’ that had to be compiled by the supplier.

108. Maintaining effective channels of communication was seen by the leading exporters as critical in order to supply almost any European buyer on a consistent basis, requiring access to critical communication technologies. It was recognized that efficiency of communication had been significantly enhanced in Ghana over recent years, with the widespread availability of cellular telephones and the internet, which had undoubtedly played a significant role in facilitating the access of exporters to European markets. While not all exporters had access to the internet at their offices, especially where these are based at agricultural production facilities in rural areas, the internet has become a major means of communication with customers, with the smaller exporters making use of internet cafes. Among larger exporters/producers, some supermarket buyers used the internet to obtain regular quality reports from their suppliers and/or to undertake other conformity checks (see below).
109. The main channel through which the interviewed out-growers became aware of evolving food safety and quality requirements was their buyers. Out-growers supplying larger exporters were generally satisfied with the information they received, which was considered timely and appropriate to their operations. In some cases they were provided with technical support by their customers, especially where major enhancements in food safety or quality management were being required, for example implementation of EUREGAP. At the other extreme, however, and especially among out-growers supplying smaller and less sophisticated exporters, the interviewees were less well informed. Further, they were frequently required to comply with enhanced standards at short notice, and almost as a fate a compli or situation of ‘take it or leave it’. In either case, out-growers acknowledged that they had little or no scope to negotiate with their customers, while the ratchet-up of food safety and quality standards served to further enhance the market power their buyers had over them.

110. The interviews highlighted a clear difference in the access to information of smaller and larger exporters and producers. The smallest (and often less sophisticated) exporters were totally reliant on their customers for information and took no steps to substantiate what they were told. In many cases they were powerless to challenge what was being asked of them. Larger exporters were generally more confident and, on some occasions, entered into a dialogue with their customers over what was being required. Larger exporters generally became aware of changes in food safety and quality requirements earlier and thus had a longer period of time in which to comply. The ability to keep abreast of food safety and quality standards and to manage the compliance process was seen by the leading exporters as a source of competitive advantage, to be protected rather than shared with their industry colleagues.

**Monitoring producers:**

111. The majority of the exporters interviewed in the study sourced at least part of their fruit and vegetable exports from out-growers. Among these exporters, however, there were very different approaches to selecting and monitoring suppliers. At one extreme, generally consisting of the smaller and less sophisticated exporters, produce was procured from a wide body of (maybe irregular) out-growers that had almost free entry and exit to the supply chain. Exporters applied very limited requirements on their suppliers and there was almost no monitoring. At the other extreme, out-growers were required to fulfil certain requirements, including compliance with specified practices, and often put on ‘probation’ in the short term to ‘prove themselves’. The case of Tongu Farms in Box 1 provides an extreme case. Accepted out-growers were monitored on an on-going basis, for example through technical field staff and extension officials employed by the exporter. Donor and NGO projects had, in some cases, been instrumental in linking exporters to groups of out-growers.

112. In response to the private food safety and quality standards of their customers, and in particular demands for traceability through the supply chain, controls on use of pesticides and application of GAP, the larger exporters had made significant changes to their supply chains. On the one hand, some of the interviewees had consolidated their procurement systems either by expanding their own production or by sourcing from a contracted group of (often larger) out-growers. On the other hand, where out-growers were used, exporters had implemented their own production codes that defined agronomic and other practices that were required to be employed by contracted producers. In many cases these control mechanisms were supported by training programs, provision of technical support, surveillance of out-growers, etc. Although most exporters still relied on unwritten contracts with their suppliers, these had generally become more formal in nature, with defined actions in the event of non-compliance with their codes. Indeed, many exporters had shed significant numbers of out-growers that had been unable to comply with their requirements. In turn, this action had served to enhance rates of compliance among remaining out-growers by demonstrating the ‘negative consequences’ of non-compliance.
Conformity assessment procedures, certification and audits:

113. Exporters supplying European supermarkets and other exacting buyers had generally established long-term relations with their customers, although in most cases these had not progressed to the status of ‘preferred supplier’, although there were exceptions among the most sophisticated exporters. There were relatively few examples of exporters being dropped by their suppliers, perhaps reflecting the fact that most of the interviewees were not supplying buyers with the strictest food safety and quality standards. Where exporters had been dropped by their customers, the main reasons appeared to be the failure to meet quantity and/or frequency of supply requirements rather than food safety and quality standards. There were also cases of exporters choosing to cease supplying certain customers, predominantly because the margins were insufficient to provide the required returns.

114. Exporters that had managed to secure supply relations with European (and especially UK) supermarkets were generally subject to multi-tiered enforcement structures. These included annual audits by third party certifiers, visits by supermarket buyers, requirements for routine quality reports, ad hoc requests for digital photographs of production facilities, etc. On the one hand, these imposed considerable managerial costs on these firms, which were not perceived to be covered by higher prices; although perhaps these should have been seen as a cost of participating in such supply chains? On the other, these enforcement regimes were perceived to reduce the risks of shifting into non-compliance with private food safety and quality standards, which might compromise the investments that had been made. The fact that these firms were subject to such controls was also recognised by other buyers (for example European wholesalers) as a sign of higher quality, such that many preferentially sourced from exporters that supply European supermarkets.

115. At the other extreme, exporters supplying less exacting markets were not subject to any oversight from their customers at all. Although these customers did visit on (often infrequent) occasions, the main topic of any negotiations was generally supply quantities and price. Indeed, some of the smaller producers/exporters claimed to have never been asked any questions about their food safety and quality practices!

Supply chain coordination and traceability:

116. Collectively, the organisational and procedural changes that exporters had made in response to the private food safety and quality standards they faced had required significant upgrading of managerial expertise. It was acknowledged that the fruit and vegetable export sector in Ghana had traditionally operated in a rather informal manner that clearly lagged behind key competitors (for example, Kenya) in its organizational capabilities. The need to meet exacting logistical and record-keeping had installed more sophisticated data recording and capture systems and either trained existing staff in production, human resource, quality assurance and/or logistics management, or employed new personnel with the required skills.

117. An increasingly important requirement for fruit and vegetable exporters supply in the UK and some continental European supermarkets was traceability. For example, a number of leading exporters had implemented computer-based traceability systems through their supply chain that permitted product consignments to be traced back to individual production plots, and for information to be reserved on planting and harvesting dates, crop treatments, etc. In some cases the implementation of such systems had been accompanied by the consolidation of the supply chain, with increased focus and oversight of a smaller group of larger out-growers. The maintenance of traceability through the supply chain was recognized to be one of the foremost challenges by leading exporters, in more than one case being described as a continuous ‘headache’. At the other extreme, however, exporters supplying less exacting markets had little or no traceability in place, at least of a formal nature, and could see no way in which such a system could
be put in place easily. Such exporters pointed to the fact that they had dealt with the same producers ‘for a long time’ and had a ‘relationship of trust’, but then highlighted the problems of side-selling, which obviated the need for such a system.

**Value-added activities:**

118. A number of leading exporters highlighted that the efforts made to enhance food safety and quality management capacity through their supply chains had caused a shift in their own perspective, and also that of their suppliers towards a market orientation. In turn, these interviewees recognized the importance of keeping abreast of buyer requirements on an on-going basis and saw such challenges as the potential basis for competitive repositioning and value-addition. Further, certification to internationally-recognized standards such as EUREPGAP had served to enhance the confidence of these exporters and induced them to pursue more lucrative export opportunities that were previously seen as ‘out of their reach’.

119. Among these leading exporters, the greatest challenge was seen to be the quest for value addition. Although there are notable exceptions (for example cut pineapple and organic and/or fair trade fruit and vegetables), most exporters simply bulk-pack their produce. Given these low levels of value addition, most of the food safety and quality requirements faced by Ghanaian exporters/producers are at the production level and it is recognized that considerable investments would be needed in order to undertake further processing activities in accordance with strict product and process standards. At the same time, however, such standards are not regarded as the primary constraint to value addition. Rather, the key concern among leading exporters is the lack of marketing and technical capabilities through which innovative products could be developed and commercialized.

**Logistics:**

120. Alongside food safety and quality requirements, the primary issue faced by all exporters and producers of fruit and vegetables is the need to meet buyer demands in terms of on-time delivery, consistency of supply, etc. Without exception, the interviewees highlighted the weakness of logistical capacity in Ghana, including road networks, cold storage facilities, domestic haulage services, etc. Indeed, such logistical issues were considered the single most important challenge facing the sector. A number of interviewees could recollect examples of consignments being lost due to collisions on the road, delays at the port, etc. The inability to deliver on time was also the most frequently cited reason for losing sales, and even established customers. The poor level of infrastructure was further blamed for the deterioration of produce quality, due to heat or physical damage, which reduced shelf-life and was the frequent reason for price discounts on delivery.

121. A related issue was the access and cost of packaging materials. Domestic manufacturers were frequently unable to supply the quantity and/or quality of packaging required for the most exacting customers, requiring that materials were imported. In turn, cases of irregular supplies of packaging materials were cited, such that produce had been delivered to the exporter’s packing facility, which subsequently was not exported because of lack of boxes.

**Supply chain behaviour and structural change:**

122. Almost universally, the interviewees highlighted the on-going changes to the export-oriented fruit and vegetable sector in Ghana. Most notably, it was recognized that a small number of sophisticated exporters/producers were coming to dominate the sector. This was a trend that was considered likely to continue, with existing firms and new entrants accounting for a greater proportion of exports. At the same time, integrated produce-exporters and larger-scale out-growers had become more important and there
were concerns about the future role of smaller out-growers in export supply chains to more demanding markets, especially in Europe. At the same time, notable cases of small-scale producers upgrading their capacity, including compliance with EUREPGAP, and supplying for export were cited. Almost universally these had been provided with donor assistance and/or the exporter had played a major role in upgrading. Although there was scepticism among the leading exporters about the scope for such efforts to be scaled-up, such cases were given as evidence that supply chains involving small-scale producers ‘could work’.

7. Conclusions:

123. Private food safety and quality standards are undoubtedly having a profound impact on the fruit and vegetable export sector in Ghana. Although the predominant markets served by Ghanaian exporters, that have historically pursued a lower price and lower quality market strategy, are mainly governed by regulatory requirements, and few exporters have penetrated the most demanding markets in terms of private food safety and quality standards (for example, the UK supermarkets), efforts have been made to upgrade prevailing food safety and quality capacity and to comply with standards such as EUREPGAP. It is evident, therefore, that leading exporters, producer-exporters and their out-growers are able to meet the requirements of private food safety and quality standards, and can benefit from doing so, although at the same time the non-recurring costs of compliance act as an absolute barrier to accessing higher-value markets for many. Further, the associated non-recurring costs of compliance are acting to restructure the export sector, with the increasing dominance of a small number of larger producer-exporters. How to overcome the barriers faced by the remaining majority of fruit and vegetable exporters is a major challenge for the public and private sectors in Ghana.

124. Looking at the collective experiences of upgrading food safety and quality standards for exports of fruit and vegetables in Ghana, it is evident that much of the impetus and facilitation has come from outside of the country. On the one hand, the predominant driver of the upgrading of food safety and quality management capacity has been the requirements of export markets; indeed, most exporters have responded in a defensive mode to the enhancement of their supplier’s requirements rather than looking ahead to what the market might be demanding in the future. On the other hand, most of the technical and financial support to the upgrading of capacity has come from donor-funded projects and programs. In the short-term this may not be a great concern provided there are spill-overs to the prevailing level of capacity in Ghana in terms of expertise, upgrading of more fundamental infrastructure (for example roads and electricity supply), etc. while admitting that the scope of this case study was quite narrow, there is very limited evidence of this. Thus, while we see pockets of enhanced capacity, this is typically confined to particular exporters and their supply chains. Thus, the interviews highlighted rather stark cases of highly capable producer-exporters situated and working alongside producer-exporters that had very rudimentary food safety controls, and indeed had little idea of where to go to see such capacity in operation!

125. The ability to comply with stricter food safety and quality norms is constrained and hampered by weaknesses in fundamental capacity in Ghana. Broadly, public infrastructure is inadequate to meet the needs of exporters attempting to enhance their ability to meet ever more exacting market demands. To some extent leading exporters have by-passed such weaknesses through enhancement of their own capacity and/or making use of private capacity, often in other countries. However, this is not necessarily the most efficient strategy and there will remain a key role for the public sector in providing key functions and services. In this respect it is critical that donors do not routinely by-pass the public sector in their dealings with private exporters.

126. International donors and technical support organisations have played an important role in the upgrading of food safety and quality capacity in Ghana, most notably certification to EUREPGAP, although their dominance in attempts to comply with food safety and quality standards in international markets is a major factor behind the lack of development of support services and capacity domestically.
This is an issue that needs to be addressed as a matter of some urgency. Indeed, it is imperative that the Ghanaian export sector and associated public and private infrastructure becomes self-reliant such that capacity can be achieved and maintained without reliance on external financial or technical support.

127. The impact of food safety and quality standards and the efforts of exporters to comply in order to access higher-value markets need to be examined in the context of wider infrastructural and organisational weaknesses. Thus, there is a need for greater industry leadership and coordination, for example through the promulgation of industry standards that set a national benchmark for the fruit and vegetable export sector. More fundamentally, logistical and distributional failings needed to be corrected, in particular the lack of cold storage facilities at the air and sea port (as is currently underway or planned), transport infrastructure etc, and then the established capacity needs to be maintained. Investments are also needed to adjust production capacity to market demand, for example through planting of new varieties. Ignoring these wider problems will mean that the sector as a whole will struggle to compete internationally, with or without the need to meet exacting food safety and quality standards.

128. Into the future, the imperative for a larger proportion of the fruit and vegetable sector in Ghana to comply with private food safety and quality standards will grow, requiring the enhancement of not only private capacity, but also the ability of the public sector to undertake key functions. At the same time, the challenge is to develop market opportunities, and comply with associated food safety and quality requirements, in a manner that does not act to exclude small-scale producers. While current land tenure systems mean that exporters are likely to remain reliant on out-growers, food safety and quality management capacity along the supply chain must be enhanced in a manner than preserves and enhances international competitiveness. It must be borne in mind that, as Ghana is upgrading its own capacity competing nations are doing the same. Many of these competitors have a ‘head start’ and the challenge for Ghana is to ‘make up ground’ such that it gains a sustainable competitive position in higher-value export markets.
REFERENCES


