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**THE ECONOMIC IMPACT OF A BAN ON IMPORTS OF AIR
FREIGHTED ORGANIC PRODUCTS TO THE UK**

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Statements in quotation marks indicate direct speech by interviewees.

Executive Summary

Against the background of growing concern about climate change, some European private organic standard-setting bodies led by the Soil Association are considering whether to refuse certification of organic produce imported by air. Their right to determine the rules to which they certify produce, irrespective of whether this is already certified to EU public rules, has been recently re-affirmed in the process of the revision of EU Organic Regulation. A change in Soil Association rules along these lines may have a significant impact, firstly because UK supermarkets have historically favoured that their suppliers certify to Soil Association rules, and secondly because air freighting of organic produce to the UK has increased considerably in recent years. This increase is related to UK supermarkets' embrace of organic sales, in a context where competition between supermarkets over fresh produce market share emphasises widening the product range and securing its year-round availability.

Air freighted organic imports into the UK in 2006 accounted for only about 1.9% of all organic fresh produce imports by volume, although for the categories of product subject to air freighting they constituted 4.1% by volume. Their share of retail sales was considerably greater. In terms of value, air freighted imports represented 3.1% of all organic fresh fruit sales, 13.4% of all organic fresh vegetable sales and 8.1% of the entire organic fresh produce category.

Low income and lower middle income countries account for the great majority (79%) of all air freighted organic imports to the UK in 2006. Amongst low income countries, dependence on air freight as a means of fresh produce transport is very high.

Almost all air freighting (95-96% by volume and value) takes place in the service of making highly perishable products available on an seasonal extension or, more frequently, a year-round basis. Better planning and coordination of supply would eliminate only a small fraction.

It is almost certainly unavoidable to use airfreight for imports of some categories of fresh produce from outside Europe and the Mediterranean. These include green beans, mange tout, snap peas, baby corn, leaf salads, tender-stem broccoli, asparagus and celery. Even when they are exported from eastern and southern Mediterranean countries in a conventional form, these products are very frequently transported by air. This is almost invariably the case when these crops (as well as most exotic fruits) are prepared and presented in value added forms.

For exotic whole fruit such as limes and pineapple, using sea freight between the tropics and the UK is technically feasible, but this will be at the cost of quality. More generally, airfreight ‘solutions’ serve to reduce exporters’ and importers’ risks, especially where producers and exporters are resource poor or where customers place a priority on supply flexibility. Even where sea freight ‘solutions’ are found for highly perishable products, such solutions tend to be case (product + origin + exporter) specific, and many factors militate against their general application.

UK importers – including organic ones – are strongly opposed to the idea of a ban and, unless otherwise directed by their clients, would respond to it by changing certification body (and certifying to the EU/Defra Regulation rather than to a private standard). UK supermarkets are also hostile to a ban, and their opposition to it is likely to make it unworkable.

If however a ban is introduced and somehow proves workable, since sea freight solutions are difficult if not impossible for most product-origin-exporter combinations where airfreight is used currently, virtually all the produce currently transported by air will be removed from the UK market. This corresponds to an annual loss in retail sales of around £42.6 million. In addition to this static impact on sales there will be a series of so-called dynamic impacts which will increase losses further. The two most easily measurable of these will add around another £4.9 million to these losses. Others, longer-term and more difficult to measure, may be at least equally damaging.

In the wake of a successfully implemented ban, retail shelf space is likely to be lost permanently to conventional products. In the process a number of UK import businesses will be badly affected, particularly those with high shares of organic sales in total sales. Some conventional importers are likely to drop organic products completely.

About 50-60 producer-exporters worldwide will be affected by a ban. The great majority of these export by air for continuous periods throughout the year. In relation to this group, the most important direct impacts of a ban are:

- A ban will force a choice between reversion to conventional production (at lower levels of profitability) and closure. The starkness of this choice is due to the absence of sea freight alternatives (technologically and/or commercially), problems in adapting corporate and national trade infrastructures to new markets, and the absence of local/regional markets for the products in question. Many organic producer-exporters, particularly those who are mainly organic, will not have the financial or technical capacity to successfully switch to conventional production.

- Even where reversion to conventional production and trade occurs, rather than closure, a ban will cause significant levels of dismissals and/or cancellation of contracts with smallholders and outgrowers. On commercial farms, dismissals will result from replacing production systems that are more highly labour intensive with ones that are less so, and because some formerly organic lines will be uncompetitive in a conventional form. The greater the scale of organic production, and the more labour-intensive it is, the more dismissals will be caused.
- A ban will remove greater or lesser magnitudes of income from areas where organic production is located. The magnitude of income removed, and therefore the extent of local impacts, will vary proportionately with how many workers and/or smallholders / outgrowers are contracted, how well they are remunerated and how much the parent enterprise spends on local goods and services.

Country case studies of Kenya and Ghana demonstrate that the indirect impacts in exporting countries of a ban will almost certainly further include:

- Decline in living standards and probable sale of assets for a large number of those made unemployed, as alternative local employment opportunities are scarce and when available typically remunerated at half current levels.
- Elimination of opportunities to attend fee-paying schools (which in Kenya include all government secondary schools) for children of workers dismissed or smallholder / outgrowers whose contracts are cancelled, as well as for an average of two other extended family members whose schooling is typically financed through income from export enterprises.
- Firing of the employees of those dismissed or whose contracts are cancelled by export companies. Workers and smallholders in export operations normally employ other workers in agriculture, petty trade or domestic service.
- Destabilisation of local communities in which workers/contracted smallholders live, and where they typically represent a 'labour aristocracy'.
- Loss of opportunities for learning/applying organic agricultural techniques, for commercial growers and their workers as well as for contracted smallholders.
- Reduction of the public profile and credibility of national organic sectors in exporting countries.

- Disincentives for prospective entrants to join the sector.
- Seriously damaged relations between national organic movements in the affected countries and the Soil Association.

On a global scale the number of workers and smallholders dependent to different degrees on export of air freighted organic produce is relatively small, and the overall economic impact on developing countries in general will not be great. However, in the localities that export enterprises are based, the impacts will be profound. A very rough estimate is that the livelihoods of at least 21,500 persons in exporting countries will be seriously compromised.

There will also be profound impacts in relation to the organic sectors of the countries concerned, particularly in low income countries. Here the implications will be firstly to force these countries' sectors back onto reliance on traditional agro-commodity exports, with all the problems this entails in relation to secular declines in price and price instability. Secondly, a ban will damage the public face and national reputation of these sectors, meaning that it be taken less seriously by governments and by potential investors.

I. Introduction

In June 2007 the UK organic standard-setting body, the Soil Association, launched a Green Paper and public consultation on possible courses of action that it might adopt in relation to reducing or eliminating the contribution of air freighted organic imports to climate change. Shortly after, the authors were commissioned by the International Trade Centre to conduct a study of the economic impacts that would occur if the Soil Association chose to ban certification or re-certification of organic products imported by air. Although the Green Paper discusses other *options falling short of a ban*, the authors were not asked to consider these. Nor were they asked to consider the *climate change implications* of a ban or any other option. A final limitation of the study is that it only considers *impacts of a ban in relation to fresh produce*. Other organic products notably vanilla, essential oils, dried herbs, teas, de-hydrated fruits are regularly transported by air. However, the volumes concerned are tiny in comparison with those of fresh produce.¹

The study is a preliminary analysis of the economic impacts of a possible ban on organic fresh imports, in the UK on the one hand and in countries supplying to the UK by air on the other. While an attempt is made to sketch some aspects of the overall supplying country impact, detailed assessments are provided only in relation to two countries. These are Kenya and Ghana, which are respectively the third and fifth most important supplying countries to the UK in terms of airfreight and which jointly accounted for 19% of all air freighted organic fresh produce imports to the UK in 2006.

This analysis is preceded by an exposition of the general relation between organic regulations, standards and certification; of the role of organic regulations and standards in relation to international trade in organic products; and of current developments in markets other than the UK in respect of (organic) standard setting on climate change. The general role of airfreight in UK organic imports of fresh produce is also described before the main analysis is presented. The discussion here involves a comparison with Germany, the largest organic market in mainland Europe.

The research methods used by the authors comprised interviews and questionnaires in the UK and mainland Europe and short periods of fieldwork in Kenya and Ghana involving farm visits,

¹ In the case of a few countries, notably India and Madagascar, export of these products by air may play a more important role than is generally the case. However, the authors had no remit to pursue this topic.

interviews and focus group discussions. In all, interviews were held with and/or questionnaire responses received from 13 UK-based importers, 6 importers based in the Netherlands and 6 based in Germany. These were supplemented with interviews/questionnaire responses from 12 export companies using airfreight. In addition, interviews were held with 5 leading UK retailers (another provided a statement), 5 organic standard-setting bodies and 8 organic certification bodies. Since these interviews / questionnaires were all carried out on the understanding of confidentiality, no list of respondents is provided.

While the report and the research it is based upon are completely independent of the Soil Association, the Soil Association cooperated with the authors in the course of their work. This took the form of asking some licensees if they were prepared to participate in the study and then providing contact details for those that agreed. However, some UK importers, a majority of the exporters to the UK and all other interviewees were contacted directly by the authors themselves.

2. Organic Regulations and Standards and the Import of Organic Products

ORGANIC REGULATION, STANDARDS AND CERTIFICATION

Organic production and trade in the European Union (EU), USA and Japan is governed by both public regulations and private standards. In the European Union the relevant Regulation is No. 2092/91, which covers crop and livestock production, processing of organic food, permitted inputs in production and processing, integrity of the supply chain (minimum inspection requirements for farms, processors, wholesalers and importers as well as requirements that inspection bodies must fulfil), labelling rules and rules governing imports. The EU regulation forms the basis of national public regulations in EU member states. It is also the main reference for public regulation in non-EU countries in Europe such as Switzerland and Norway. Generally there is very little departure from the EU Regulation in national legislation. This goes also for the public regulation in the UK, the so-called 'Defra² Regulation'.

² Named after the UK Department of Environment, Farming and Regional Affairs

The organic movement, in the shape of the EU Regional Group of the International Federation of Organic Agricultural Movements (IFOAM) has had a strong but not controlling influence over the development of the EU regulation since the latter's inception in June 1991. The other major influence on the process has been the EU Commission, in particular the Commission on Agriculture (Gibbon 2006). Commercial interests have played almost no role, normally adjusting themselves to whatever standards are set by others rather than seeking influence over them.³

IFOAM comprises a large number of private national and regional bodies formed to promote organic production and trade. Many of these bodies have their own standards for production and trade. The standards of private bodies in Europe are often broader (covering more sectors⁴) and more demanding than those found in national or EU regulations, and it is development in such private standards that has shaped the EU regulatory process. In a few countries, a single private body plays a dominant role and its standards, rather than those of the national regulation, become the norm. Though they have no legal force they thus come to govern market access. This is the case for example in Switzerland with Bio-Suisse and in the UK with the Soil Association.⁵

For operators to be able to sell or label their products as organic, they must be inspected and certified by a recognised certification body. Such bodies may certify an operator against the EU regulation (or one of its national variants) and/or against one or more private standards. There are around 130 organic certification bodies accredited to operate in the EU (Organic Certification Directory 2004). National or regional governments own a few of these but the large majority is private.

While almost all the private certification bodies have their roots in the organic movement, they differ mainly according to whether they are 'owned' by private standard-setting bodies. Some national UK organic certification bodies such as Organic Farmers & Growers, and international ones such as Ecocert and IMO have no standards of their own and certify mainly to the EU Regulation. Others that do have private standard-setting parents, for example Soil Association Certification, certify mainly to the standards of their parent organisation.

³ The only exception seems to have been when retailers lobbied to avoid falling under the coverage of an extension of inspection requirements to storage and warehousing premises (EU Regulation 392/04) in 2003-04.

⁴ For example textiles, woodland, health and beauty products – none of which are covered in the EU Regulation.

⁵ About 70% of UK operators are generally reckoned to be certified to Soil Association standards.

ORGANIC REGULATION AND STANDARDS AND INTERNATIONAL TRADE IN ORGANIC PRODUCE

Under Regulation 2092/91 imports of organic products to the EU could be admitted under two different sets of circumstances. Either the exporting country had to have systems for regulating organic production and trade deemed equivalent to those of the EU (in which case any of its exports could freely enter any EU country); or the 'competent authority' in an individual EU member country could authorise the exports of a given exporter to the EU country in question, on the basis of evidence that the exporter was certified to EU rules for the product in question by a certification body accredited to EU standards. These authorisations could be granted on a case-by-case basis for a period up to five years.

In practice only a handful of countries were ever deemed to have regulatory systems equivalent to the EU's and almost all imports from developing countries entered on the basis of the second option. Furthermore, there were great differences between EU member states in how they interpreted their discretionary powers to grant authorisations. Prior to 1999 only Austria, Belgium, Germany, Italy and the UK notified any authorisations to the EU, and the UK and Germany accounted for over 90% of these (Gibbon 2006, Table 1).⁶

In 2001, following two large fraud cases, the EU tightened the operation of the system associated with the second option. A requirement (EU Regulation 1788/01) was introduced that every single consignment imported under a given authorisation had to be accompanied by an original certificate of inspection. The EU tolerated flexibility in the application of this requirement, with some member states accepting photocopies of such certificates. However these still had to be verified at the port of entry at the time of arrival of a given assignment, and substantial charges were levied by National Port Health Authorities for verifications required outside normal working hours.⁷

Organisations representing developing country exporters, and IFOAM more broadly, questioned whether these official border measures were proportional to their stated objectives. Moreover, IFOAM also expressed worries over the years that private standards in some EU member states represented a barrier to trade. This is because, where a private standard-setting body does not accept the standards of other organisations (or the EU Regulation) as equivalent to its own, and

⁶ It seems that the Netherlands also granted a large number of authorisations but never notified these to Brussels.

⁷ The introduction of this system is said by the Fresh Produce Export Association of Kenya (FPEAK) to have led to two or three large conventional exporters of fresh produce abandoning plans to start organic operations.

where such bodies' standards are *de facto* national norms, they can block imports from third countries by refusing to re-certify them. This issue has been a concern not only in relation to international trade, but also for intra-EU trade in organic products.

In 2005-06 the EU Commission drafted a comprehensive amendment of Regulation 2092/91, aimed at its simplification as well as its harmonisation with broader EU objectives including promotion of the single market. In this context new rules were proposed governing imports to the EU as well as the rights of private standard-setting organisations.

On imports, the Commission proposed maintaining two distinct options under which products could enter the community, while making the second option less burdensome on traders. It was proposed that, for an exporter in a third country deemed not to have a regulatory system equivalent to the EU's, market access could be obtained simply by his or her certification to the EU regulation by any certification body listed for this purpose by the EU. The Commission's proposed amendment (No. 161 to Art. 27, 1) was modified by the EU Committee on Agriculture and Rural Development – apparently under pressure from the organic movement – to the effect that all third country imports, regardless of the option under which they enter the EU, should be labelled with their country of origin. The proponents of the new rule (which will come into effect in 2009) argued that 'indication of country of origin is relevant information for the consumer ... consumers have the right to know the origin of the organic products they are purchasing, even if they meet European standards' (European Parliament Committee on Agriculture & Rural Development 2006). No such requirement was proposed for products traded between EU countries. Later, the Commission managed to change the requirement to one simply stating that imports should be labelled 'non-EU'.

In relation to private standards the Commission sought firstly to make mandatory the use of an EU logo (including on imports) and secondly to restrict the actions of private standard-setters in two ways. One was to outlaw the use in labelling or advertising of claims that specific private standards were 'stricter, more organic or otherwise superior to' the EU Regulation (proposed amendment 128 to Art. 20, 1 (1)). The other was to require certification bodies linked to private standard-setters to automatically re-certify any product already certified to the EU Regulation or another EU private standard (unless it could be proved that the regulation or these standards were not equivalent to their own) (Amendments 154 and 155 to Art. 24, 2 and 3).

Following pressure from the IFOAM EU Regional Group these proposed changes were mostly defeated or emptied of meaning. The Commission succeeded in making use of the EU logo mandatory, but the use in labelling of claims that private standards were 'more specific' was

expressly permitted. In relation to re-certification the term ‘may not refuse’, and the requirement for proof of difference in standards if certification was refused, were both dropped. In presenting the last two of these changes to Commission’s proposal, the Committee on Agriculture and Rural Development’s rapporteur stated:

Private organic standards (have) for years...contributed to build consumer’s trust. These logos do not confuse consumers or distort the internal market, as the Commission claims, but stimulate and differentiate supply and demand...it is unthinkable that the operation of private associations should be undermined in favour of ... elastic, unfamiliar rules which would risk damaging consumer trust. (European Parliament Committee on Agriculture & Rural Development, op. cit.)

Trade in organic products from developing countries into some EU countries, including the UK, where private standards constitute the norm, can thus be said to face three general barriers to trade. The first is that, where their governments’ regulatory systems are deemed not equivalent to the EU’s, exporters must in effect conform to the EU’s internal regulations to gain market entry. The second is that private standards in some EU countries may be in excess of EU regulatory requirements and that therefore developing country products may not enter these markets even if they conform to EU regulatory requirements. The third is that from 2009, even where they gain market entry, developing country products will have to be labelled as ‘non-EU’ in origin.

THE AIRFREIGHT ISSUE

The UK context

The last few years have seen rising public concern over climate change. Over the last two years greenhouse gas emissions from aircraft have attracted increasing attention within this wider context. In the UK this has been reflected both in proposals to impose a tax on air travel and in the introduction of labelling schemes for air freighted fresh produce by two leading UK food retailers, Tesco and Marks & Spencer. These companies have both also stated that they will set targets to reduce the amount of food they import by air (Tesco 2007; http://www.marksandspencer.com/gp/browse.html/ref=sc_fe_c_150890031/026603)

From the outset, this issue has been intertwined with that of local and national sourcing of food. The latter is a much older one issue with trade protectionist associations. More recently it has achieved renewed attention as a result of increased consumer concern with food provenance - ‘where our food comes from’ - and claims from environmentalist groups that local food supply chains provide an environment-friendly, socially authentic and less ‘big business’-dominated form

of consumption. The rise of 'Farmers' Markets' and box schemes⁸ captures these trends and some UK supermarkets have responded by introducing regional buying offices and product ranges, or 'locally produced' symbols.

While the Soil Association has yet to decide upon whether to introduce a ban on certifying or re-certifying organic produce imported to the UK by air, it is worth mentioning that some of its licensees are already advertising their products as if such a ban existed. At least 9 UK box schemes include the term 'we never air freight' in their advertising, and a number of them display on their websites a logo based on the Soil Association's which features this term together with an aircraft with a cross through it.

Organic standards and climate change

Although the trend should not be exaggerated, a number of private organic standard-setting bodies in Europe are in the process of discussing how to deal with the issue of climate change.⁹ Amongst those with a strong interest in the issue, two broad approaches can be discerned: firstly to include specific climate change standards within standards for organic farming and food, and secondly to develop additional climate change standards independently of organic standards.

Within the first approach of including climate change standards within organic standards, two main sub-approaches can be detected. One is to deal with climate change broadly, while the other is to select a single 'climate killer' issue for attention. The influential Rhineland-based German organic standard-setting body Bioland¹⁰ is working within the first of these sub-approaches to generate a standard or standards on climate change that will probably include a focus on food miles, but as one issue among a number. Partly because Bioland was not much involved with certification of importers of fresh produce, to date it has not occurred to it to deal with airfreight as a specific issue.

⁸ Direct sales of organic fresh produce, mainly by box schemes, are increasing in the UK and reached £146 million in 2006. This represents about 10% of total organic food sales (Soil Association 2007).

⁹ Alongside discussions with the two leading private standard-setting bodies in Germany and the sole such bodies in Switzerland and Sweden (see below) the authors also talked to the main private standard-setter in the Netherlands (Biologica). Biologica is not yet moving toward developing policies in relation to climate change.

¹⁰ In 2006 Bioland with 4,558 licensees was the largest, and Naturland (see below) with 1,806 licensees the second largest private standard-setting bodies to which German operators were certified. However, 7,637 German operators were certified to the EU Regulation alone (Dosch & Gerber 2007).

Another German private organic standard-setter, the Bavarian-based Naturland, has determined that, within the overall issue of climate change, it will give special attention to the issue of food miles. It has selected this issue because ‘forces hostile to the movement use it all the time to attack the movement as hypocritical’. Within this overall focus, a specific proposal on airfreight was likely, since ‘it is perceived as so important by the public’. On the other hand airfreight would not necessarily be the main focus of an overall standard in the area and nor is it yet clear what will be proposed on airfreight: ‘some people want a simple solution but this doesn’t mean that that we will propose a ban.’ The first steps will be to set up a working group to develop a proposal, and to commission a consumer survey on the issue. Naturland expects a proposal to be presented to its General Assembly at the end of November 2007.

Two European private organic standard-setting organisations have already adopted bans on certifying imports of organic produce by air. These are the Swiss national organic standard-setting body Bio-Suisse and the major Swiss supermarket chain Migros (in its private label ‘Bio Engagement’), in 2000 and 2003 respectively.

Bio-Suisse is said to have had an ‘internal rule’ prohibiting certification of organic produce imported by air from the 1970s onward. This was formalised after internal discussion of Bio-Suisse’s image with Swiss ‘ethical consumers’, following the release of a study by Thomas Dyllik of St Gallen University in 1999. Dyllik found a combination of demand for greater transparency about the origin of products and very high levels of preference for ‘local’ products.¹¹ Representatives of Bio-Suisse are unclear whether the ban had any immediate impact, as the organisation had very few international licensees and as it did not ‘own’ a certification organisation (Bio-inspecta is the main body certifying to Bio-Suisse standards). The effectiveness of the ban is high, but not comprehensive. Two factors work in its favour. The first is that products carrying a Bio-Suisse logo carry a premium in the national market over and above products certified to the Swiss national regulation. This provides a disincentive for exporters to airfreight into the Swiss market. Secondly, the dominant Swiss supermarket Migros (with whom Bio-Suisse had a somewhat weaker relation than with its main competitor Co-op) introduced a ban on airfreight in its private organic label when this was launched in 2003.¹² Nevertheless during the course of this study an exporter (certified to the EU Regulation) was interviewed who was air freighting 1.3 tons of

¹¹ 22% of those surveyed bought Swiss products ‘out of principle’ and a further 56% bought products ‘only from Switzerland and the surrounding region’.

¹² See Reichtlinien Migros-Bio Verarbeitung und Handel, para. 5.4 (www.migros.ch).

exotic fruit per week to Switzerland. The Swiss authorities recognise the EU Regulation as equivalent to their own.

Bio-Suisse states that their ban is not a blanket one: a provision exists for making exceptions. However, only one request has been made to date for this provision to be activated. This request, for air freighting vanilla on grounds of security and because the volumes involved were sub-economic to ship by sea, was granted.

The Swedish national organic standard-setting body Krav is the only one currently following the second general approach, of developing a climate change standard independently of organic standards. The Krav process is being conducted jointly with Svenskt Sigill, the quality-auditing wing of the Swedish Farmers' Federation (LRF), a body representing 'cleaner' Swedish conventional producers, and is aimed at covering both organic and non-organic food. The add-on standard will provide criteria for arriving at a climate rating for given production systems (not products), based on an assessment of total carbon dioxide, methane and nitrous oxide emissions. The rating will include the transport systems associated with particular production systems and in this regard cover fuel consumption at all stages of the process and by all forms of transport, but this will be only one focus amongst many. The intention is find a minimum standard that will reduce greenhouse gas emissions while allowing a good number of producers to maintain market access. Certification or non-certification to this standard will have no bearing on the ability of products to be traded as organic.

3. The Comparative Dynamics of Organic Fresh Produce Markets

The UK fresh produce market, both conventional and organic, is more continuous in term of multi-seasonal availability and more diversified in terms of product range and than any other in the EU. The UK fresh produce range is also unique in the high share of sales represented by 'value-added' fresh produce – washed, sliced, diced, mixed salads, green vegetables or fruit packed on covered trays. In Germany, Netherlands and Scandinavia, while organic sales represent similar or higher proportions of total fresh sales than in the UK, one finds little early- or out-of-season organic produce, fewer newer organic fresh produce varieties and little organic produce prepared or presented in non-traditional ways.

Almost exclusively it has been the large conventional UK supermarkets that have promoted availability of early-season and out-of-season product in the UK. They have done so not merely to attain pro-rata increases in sales but because their own research has shown that early season availability feeds through into higher sales later in the season. According to a number of UK supermarkets, it has been improved seasonal availability of a widening range of organic fresh produce that has driven the steep rise in sales that this category has experienced over recent years.¹³

The importance of product differentiation and year-round supply in the UK organic fresh produce sector further relates to some unique features of the UK organic consumer profile. UK organic consumers show a strong interest in products' taste as well as their health properties. When UK organic consumers are categorised according to their main motivation, the largest single group (37%) turn out to be 'foodies'. Secondly, 'committed' UK organic consumers – those who buy eight organic items and upwards in a weekly shopping basket - have a marked interest in 'consistent availability, quality and innovation' (cf Duxbury 2004). These trends are also beginning to emerge in Germany (see e.g., Achim Spiller quoted in 'Perspective Biomarkt' at www.oekolandbau.nrw.de and Hamm 2007), although in this market it is still concerns about environment-related aspects of health and animal welfare that remain paramount for organic consumers (Bundesministerium für Verbraucherschutz 2005, 21-22).

On the other hand, fierce competition for market share between a small number of highly resourceful supermarket chains is clearly the main reason for the special dynamics of the UK fresh product market. While supermarket chains now dominate food sales all over Europe, in the UK they also dominate organic food sales. Whereas only 36% of all organic food sales in Germany are through supermarkets, their share in the UK is around 75% (Bundesministerium für Verbraucherschutz op. cit., 17; Soil Association 2007).

These differences are reflected in the different structures of supply chains serving organic retailing in the UK on the one hand, and Germany and elsewhere in mainland Europe on the other. It is further reflected in the relative importance of air-freighting in these supply chains, as well as in the main types of imports by airfreight that take place.

UK supermarkets typically work with importers (and occasionally directly with large third country exporters) who specialise in a specific product or a narrowly related group of products. These

¹³ There seems to be a clear overlap between those UK supermarkets giving the most overall emphasis to counter-seasonality and those with shares of organic produce in total fresh produce sales at around 10% or higher.

importers manage downstream supply chains on supermarkets' behalf, as well as providing services to them such as new product development. In the case of fresh produce the great majority of supermarkets' intake comes from a group of 15-20 large importers who, in addition to providing the services described, are often integrated backwards into crop production in the UK and/or elsewhere (including developing countries). Most of these large conventional importers also import organic produce to the UK on supermarkets' behalf. In addition, a number of UK supermarkets use as suppliers one or both of the two largest dedicated organic importers in the UK. Other dedicated organic importers, mostly based in the Netherlands, supply UK wholesale markets, box schemes and some larger organic specialty stores direct with imported produce. According to our calculations, mixed conventional-organic importers working primarily for UK supermarkets accounted for 86% by volume of all air freighted organic fresh produce imports into the UK in 2006.

In Germany, where as noted supermarkets have a much lower organic fresh produce market share, the import sector is less rationalised. Of the two main supermarkets carrying large organic offerings, one imports on its own account and another mainly uses a Dutch-based dedicated organic importer. The fragmented non-supermarket segment is serviced by a combination of larger Dutch-based dedicated organic importers and by a number of medium-sized German-based organic wholesalers, operating mainly on a regional basis. Large conventional importers play a relatively restricted role in organic trade.

Air freighted imports represent a considerably smaller share of total imports of organic fresh produce into the German as opposed to the UK market. Most German importers interviewed either stated that they did not use airfreight at all, or that – where it was used – this represented less than 1% of their business. This reflects German retailers' more limited offering of counter-seasonal, early season and value-added organic fresh produce, which in turn reflects less mature demand patterns among German consumers.

The low level of air freighted imports into Germany perhaps also reflects weaker price incentives and greater transactional risks for exporters in the German market. Prices in the German market appear to be lower than in the UK one,¹⁴ and (unlike the UK market) some sales are on a 'consigned' basis. That is, the importer does not necessarily have an order for them in advance of

¹⁴ This does not reflect lower premiums for organic products, but rather that prices for conventional food in Germany are lower than in the UK. This in turn probably reflects the well-known domination of discounters in organised German retailing.

agreeing to receive them and a price for them is not guaranteed in advance. Hence spending large sums on airfreight is not justified.

There are also interesting differences between the main combinations of fresh produce categories and origins using air freight into the UK, German and other mainland Europe markets. While the circumstances under which airfreight is chosen as a means of transport broadly correspond (see the next Section), it is notable that Mediterranean countries are almost the sole source of German early season vegetables¹⁵ and that Africa is only an origin for exotic and temperate fruit. Certain products frequently imported to Germany by air were mostly imported to the UK by sea, or where they were imported by air to the UK this was mainly in value-added forms.

It is worth noting that a German supermarket interviewed believed that air freighting of organic imports into these markets would increase from its current level, and that the product / country combinations it was used for would change. This supermarket chain, which was not currently using airfreight for organic fresh produce imports, had plans to do so in 2007 since ‘we have established that the demand is there for early- and counter-seasonal produce’.

4. UK Imports of Organic Fresh Produce by Air in 2006

UK imports of organic fresh products by air in 2006 are analysed here in relation to total volume by category; retail value by category; origin in terms of (type of) exporting countries; and composition in terms of the circumstances under which air freight was used. The main data sources used are described in the Introduction. Where these have been supplemented by other sources, these are noted in the text.

¹⁵ Cherry tomatoes and tomatoes on the vine from Israel were mentioned more than any other product/country combination by importers serving the German market.

VOLUME AND VALUE BY CATEGORY

Table 1. Air Freight Imports of Organic Fresh Produce by Volume and Retail Value, 2006

	tons	%	value (£ millions)	%
Exotic fruits	652.5	10	3.486	8
Temperate fruits	598.0	10	4.825	11
Beans & peas	2236.0	36	12.775	30
Salad vegetables	954.0	15	7.230	17
Other temperate vegetables	1537.4	24	13.491	32
Exotic vegetables	300.0	5	0.798	2
Totals	6277.9	100	42.604	100

Key:

Exotic fruits: limes, melons, avocado, papaya, pineapple, passion fruit, star fruit, mango, coconuts

Temperate fruits: stone fruits, grapes, strawberries, cherries, blueberries, citrus, apples, pears.

Beans and Peas: garden peas, mange tout/snow peas, sugar snap peas, fine beans, green/bobby beans.

Salad vegetables: salad onions, baby leaf salads, lettuce, celery

Other temperate vegetables: asparagus, baby corn, sweet corn, tomato, peppers, eggplants, zucchini, broccoli, chillies

Exotic vegetables: sweet potatoes

In all, around 6,278 tons of fresh produce was imported by air, with a retail value of around £42.6 million UK. The latter figure represents the value in retail sales of air freighted fresh produce imports to the UK in 2006, calculated on the basis of 2007 retail prices.¹⁶ Three categories of imports dominated in volumes and value terms: beans and peas, other temperature vegetables and salad vegetables.

In terms of individual crops, different varieties of beans easily led in value terms, together accounting for 19% of all imports by value. Beans were followed by broccoli, baby leaf salad and baby corn. These crops together accounted for 55% of all air freight imports by value.

SHARE OF TOTAL UK FRESH PRODUCE IMPORTS AND SALES

Air freighted organic fresh produce imports accounted for 4.1% by volume of all UK organic fresh produce imports handled by the importers covered by this study. Jointly, these importers can be considered to account for all UK organic fresh product imports for the individual

¹⁶ 2006 retail prices were not obtainable. The figure is a weighted aggregate based on unit retail prices for organic products found on Tesco's website during Summer 2007. Tesco's prices are used as a reference as the company accounts for the largest single share of all fresh produce sales amongst UK retailers.

products listed in the Key to Table 1. However, there are a large number of fresh produce categories that they do not appear to trade in. Amongst temperate vegetables these comprise standard ('Irish') potatoes, carrots, non-salad onions, leeks, swedes, beetroot, parsnips, other root crops, cauliflower, cabbage, standard types of lettuce, courgettes, aubergine, cucumbers and fresh herbs. Amongst fruits, none of the importers covered deal with bananas.

In 2002 The Henry Doubleday Research Association and the Soil Association carried out a survey funded by Defra on UK imports of all the organic temperate vegetable categories just referred to. This found total 2002 imports of 33,376 tons in these categories (www.gardenorganic.org.uk/pdfs/orgvegupdate.pdf). According to successive Soil Association *Organic Market Reports* since this date, the import share of all these categories except leafy salads, cucumbers and tomatoes has fallen since 2002 – in many cases quite substantially. Hence, it will be considered here that increases in UK consumption in these categories since 2002 have been supplied entirely by increased UK production, and that total imports for them remained in 2006 at their 2002 level.

Banana is the largest single UK fruit import category by volume, with total imports at 946,627 tons in 2006 (<http://fd.comext.eurostat.cec.eu.int/xtweb>). Assuming the organic share of these imports to be 16% by volume, or tons, then total organic fresh product imports in categories other than those traded in by importers covered by this study were approximately 175,370 tons. Since the total organic fresh product imports (by all means of transport) accounted for by the importers covered by this study was around 152,916 tons, then total UK organic fresh produce imports in 2006 stood at around 328,286 tons. Air freighted fresh produce therefore corresponded to about 1.9% of all UK organic fresh produce imports by volume in this year.

Their share of all UK organic fresh produce imports by value is almost certainly much higher, although no data is available on the latter. Their share of total UK organic fresh produce sales by value is easier to establish, since the Soil Association (private communication) has estimated on the basis of data from Mintel that total organic fresh produce sales in 2006 were worth £527 million, of which fruit represented around £272 million and vegetables £255 million. On this basis, air freighted products represented 3.1% of organic fruit sales, 13.4% of organic vegetables sales and 8.1% of all organic fresh produce sales by value.

ORIGIN BY COUNTRY OF EXPORT

79% of air-freighted exports by volume in 2006 were from low middle income and low income countries (Table 2).

Table 2. Air freighted Imports of Organic Fresh Produce by Country Category, 2006

Category	tons	%
Low income	2048.0	33
Lower middle income	2869.5	46
Upper middle income	729.8	12
High income	630.6	10

Key:

Low Income countries: per capita GNI below \$875 per annum.

Lower Middle Income countries: per capita GNI \$876-3,465 per annum.

Upper Middle Income countries: per capita GNI \$3,466-10,725 per annum

High Income countries: per capita GNI \$10,726 and over

The leading airfreight export countries by volume in 2006 were Egypt (20% of the total), Kenya (13%), Morocco (11%), the US (9%) and Zambia (8%). Of the leading group of countries, Egypt and Morocco are thought to be the major origins for these categories of organic fresh produce imports generally in the UK and wider EU markets. In both cases, a large majority of these exports use road-sea combinations of transport. On the other hand, as will be seen in Section 6, airfreight as a transport mode accounts for almost all organic fresh produce exports for Kenya and Ghana. This is also generally the case for other low-income countries. The relation between low-income status and airfreight dependence reflects both product specialisation and trade-related infrastructure.

COMPOSITION OF IMPORTS IN TERMS OF CIRCUMSTANCES OF AIRFREIGHTING

Importers were in all cases asked for the circumstances in which airfreight was used for a specific product/origin combination. These have been categorized in terms of the specific characteristics of the transactions concerned, rather than in relation to the product's perishable character, which was mentioned in almost all cases. While individual exporters often offered several reasons why a product was air freighted, only the main circumstance has been used for purposes of classification.

As can be seen, 95-96% of airfreight imports by volume and value were for season extension or counter-seasonal/year round supply reasons. This indicates that better supply planning and/or better supply chain coordination alone could eliminate only a small fraction of current airfreight imports. The great majority of airfreight imports occur because highly perishable products that cannot be grown in the UK or EU for most or all of the year have been subject to the characteristic UK market trend of season extension/elimination.

Table 3. Circumstances governing the use of Airfreight (by volume)

Circumstances	tons	%	Value £m	%
Emergency shortfalls	144.0	2.3	1.0	2.3
Low volume	77.6	1.2	0.7	1.6
Extension of the season	769.0	12.3	6.5	15.2
Counter-seasonal / year round supply	5287.3	84.2	34.4	80.8

Key: emergency shortfalls: when cited. Low volume: when cited or where import volumes <5tons/year for the importer. Extension of season: when cited or where imports volumes >5tons/year were imported over periods less than 3 months. Counter-seasonal/year round: where imported for >3months/year.

5. Likely UK Market Impacts of a Ban on Airfreight

INTRODUCTION

All the UK-based importers interviewed were certified to Soil Association standards. Three Netherlands-based importers who were contributing to UK air freighted imports were not themselves certified to Soil Association standards but they were supplying or working in close relation to Soil Association licensees (importers or wholesalers) in the UK. Netherlands-based importers have no option but to be certified by Skal, a private organisation with government sponsorship that exercises a formal monopoly in the Dutch certification market. Skal certifies to the Dutch national regulation, which is based upon the EU one. Typically though, they are also certified to other EU private standards for market access reasons.

Most UK importers reported that they were certified to Soil Association standards because, when beginning their organic business, they were advised to do so by at least one of their supermarket clients.¹⁷ Certain supermarkets consistently gave this advice because ‘the Soil Association (was) considered the main player in organics’. Therefore it was thought that Soil Association certification (and in some cases allowing the Soil Association logo to be placed on their products) would lend greater credibility to supermarkets’ marketing efforts in relation to organic products. On the other hand, all supermarkets appear to have been quite pragmatic in relation to which certification body is used, when availability of Soil Association-certified product was a problem.

¹⁷ The major UK dedicated organic fresh produce importer certified from the outset to Soil Association standards not because clients suggested this, but because its owner has supported the organization since the 1970s.

Against this background, two major scenarios will be considered in this section and in the remainder of the report. The first, Scenario A, is that the Soil Association adopts a ban on certifying or re-certifying organic produce imported by air and that supermarkets and other major clients encourage importers to retain certification to Soil Association standards. The second, Scenario B, is that the Soil Association adopts a ban but supermarkets and other major clients respond by allowing importers to certify with whom they see fit.

BARRIERS TO REDUCING DEPENDENCE ON AIRFREIGHT IN THE SHORT-TO-MEDIUM TERM

The possible impacts of Scenario A on the UK market for organic produce are significant, most obviously over the short- and medium-terms (up to five years). If UK retailers put major resources into extending growing seasons in the UK and nearby countries; if importers invest heavily in further development of modified atmosphere packaging, better temperature control systems in their cool chains and more training and monitoring of overseas suppliers; and finally if exporters invest in more powerful blast freezers and more cold rooms in the pack houses, then some of the shortfall in some of the products currently supplied by air could be made up for by the end of this period. Conversely, there are large shares of the resulting shortfall of many products that seem impossible to ever make up for this way.

Examples here are fresh vegetable varieties such as green beans, mange tout, snap peas, leaf salads, asparagus and celery; and value-added prepared fresh exotic fruits. Where these have a European or Mediterranean growing season it is typically no longer than a few months. Beyond this geographical range, even if technological solutions are possible, sea-road transport times exceed the maximum shelf life of 8 days. It is important to note that these are all cases in which use of post-harvest fungicides is also banned for conventional products, and where the conventional variants of these products from outside the Mediterranean consequently are also invariably transported by air. Not a single case was found where green or fine beans (in organic or conventional form) were being imported by sea from outside the Mediterranean region, and even within this region their transport by air was normal.

Importers identified four other barriers to reducing current dependence on airfreight. These applied to varying degrees to different products currently imported by air. The first is that organic regulations and standards prevent an effective extension of the European growing season for some crops. For example, while it the growing season for strawberries could be extended if they were grown in pots, this is not permitted.

A second is that it is a moot point whether alternative solutions for some products are feasible, if high levels of quality are a requirement. Amongst fruits, one of the crops accounting for the largest share of air freighted organic imports into the UK is limes. Organic limes can be imported from the tropics to Europe by sea in an edible condition. Limes are imported in this way by the UK importer who perhaps has invested more energy and capital than any other in devising 'road-sea solutions'. But these limes do not possess the same quality parameters as their conventional equivalent. This is a result of the fact that sea-freighted conventional limes can be waxed, while this is not permitted under organic regulations. To obtain the same quality parameters as waxed conventional limes, organic limes have to be transported by air. Hence some UK supermarkets only purchase organic limes imported by air.

A third is that not all alternative solutions are economically rational for the parties concerned, even where they can be made to work technologically without deterioration in quality. A case in point is where exporters have an alternative market at their disposal, and where the price difference between this market and the UK does not justify the exporter tying-up scarce capital in investments dedicated to a single UK customer who may be in the market for only a few weeks each year. A UK importer specialising in stone fruits and importing them from another continent a few weeks annually had spent a number of years experimenting with different combinations of modified atmosphere packaging and temperature control in order to allow the product in question to be sea-freighted. In the process, solutions had been found for some products from some origins. Yet, the importer emphasised, all specific solutions tend to be unique and to require substantial investments of time and effort by the exporter concerned - even if it was the importer who provided the associated capital investment: 'the net result is that we're using more sea freight these days, but where growers can sell into another market where demand is strong without doing any of this, getting them to go down this road is almost impossible, ...'

A fourth is that sea freight solutions impart a high degree of inflexibility to long-distance supply relations, which in the process increases risk to unacceptable levels. While UK supermarkets' demand for fresh produce is highly responsive to short-term changes in weather conditions and while a sea journey from a developing country to the UK can take three or four weeks, there is a strong chance that supply will be unable to match demand when the latter peaks. Even if demand stabilises at a higher level, for an importer to be able to get product to the UK on schedule by sea there must be a very regular container boat service, boats must depart and arrive on time and there must be a container-full of still unripe produce ready in the port to load onto the boat shortly before it does depart. Airfreight solutions are more flexible and less risky in terms of meeting demand surges, and matching lead times more generally.

A broader point concerning the use of airfreight was made by a number of importers, including those who had devoted the most resources to developing sea freight solutions. This was that for many product/origin combinations there was 'transport cycle', whereby these products were initially imported by air, but as expertise developed and investments increased, it became feasible to use sea freight. This process appears to have taken a minimum of three years for most product-origin-exporter combinations where the cycle had been completed, but could take considerably longer in others (where it was feasible at all). 'Even organic bananas were once imported by air'. Given on the one hand the unique case-by-case procedure involved in achieving workable sea freight solutions and given also supermarkets' preoccupations with flexibility, product innovation and regular extension of supply chains to new, potentially more price competitive origins, it seems naïve to believe that the need for airfreight can be eliminated once and for all from trade in given products.

EFFECTS OF THE REMOVAL OF CURRENTLY AIR FREIGHTED IMPORTS ON THE SIZE AND DEVELOPMENT OF THE UK ORGANIC MARKET

The conclusion of the above discussion is that the immediate (so-called 'static') effect of Scenario A would be the removal from the UK market of virtually all the share of supply that is currently transported by air. Scenario A would lead to an immediate annual loss of organic retail sales of around £42.6 million. As noted in Section 4 this represents over 8% of the value of all organic fresh produce sales and over 13% of the value of organic fresh vegetable sales. These figures are high relative to the volume of fresh produce to which it corresponds, as air freighting is used almost entirely for high and very high value product lines.

Besides this static effect, there will be also other so-called dynamic effects of a ban, resulting in a reduction in demand for the share of organic fresh produce remaining on the market and apparently unaffected by the ban. The first set of these dynamic effects relates to the indirect impacts of product non-availability.

The first of these impacts concerns losses in sales in the immediate periods after sudden shortfalls in supply have occurred. Importers estimate that over the weeks succeeding such shortfalls, approximately the same volume of sales are lost as are lost during supply shortfalls themselves, as sales recover only slowly. Assuming that it is now impossible to compensate for emergency shortfalls by using airfreight, then post-shortfall sales losses, over and above loss of sales due to absence of the product during shortfalls themselves, will be equivalent to the current value of the share of air freighted imports accounted for by emergency supplies. This retail sales loss will be around £2 million (see Table 3).

Somewhat different considerations arise in relation to sales of products for which the season has been extended forward by a few weeks. The reason why UK supermarkets have placed heavy emphasis on such extension is not only to achieve pro rata sales increases but also to exploit the discovery that early- season availability is associated with increased sales during traditional seasons. This is due to consumers 'learning' to purchase the product in question with increased frequency. Without airfreight, growers would not only lose out statically on lost sales during the early- or counter-season but also dynamically on the additional in-season demand stimulated by early- or counter-seasonal availability. According to some retailers, this stimulus can add as more than 5% to in-season sales. Assuming that the airfreight-based seasonal extensions in question account for 10% of total sales of the products over an entire season, and that the UK/EU growing season sales loss resulting from the absence of early season air freighted product is 5%, then the resulting total annual sales loss will be around £2.9 million.

Other dynamic effects of a ban relate to long-term market growth, and exploitation of the opportunities presented by such growth. As noted already, the areas of fresh produce sales that are growing fastest are counter-seasonal sales, sales of new product varieties and sales of value-added variants of existing products. Scenario A would lead to organic producers and traders foregoing a large part of growth in counter-seasonal sales and of value-added variants of existing products, since many of the product candidates for this will be too perishable to import by sea. Growth in sales of new product varieties, on the other hand, is likely to be retarded because Scenario A will impact adversely on operators' incentives to innovate in respect of product varieties and value added formats. Finally, organic traders would be similarly impeded in experimenting with new origins where familiarity with sophisticated packaging and cool chain technologies, and capacity to correctly handle and monitor produce are all likely to be low. In relation to these longer-term growth and profitability factors, Scenario A will damage the future competitiveness of organic fresh produce.

No attempt is made here to simulate mathematically either the short-term dynamic effects of withdrawal of counter- as opposed to early seasonal product, or any of the long-term dynamic effects just described. However, it is clear that a ban will lead to a decline in organic fresh produce sales considerably greater than the approximate £42.6 million that would be immediately wiped off them in static terms and the further £4.9 million that it is estimated would be wiped off in relation to the two short-term dynamic effects outlined.

EFFECTS OF THE DISAPPEARANCE OF CURRENTLY AIR FREIGHTED IMPORTS ON UK IMPORTERS

A final UK-related effect of Scenario A that will be considered is effects on UK import businesses. The most severe effects would be felt by businesses with a combination of high proportions of organic sales in total sales and high proportions of air freighted imports in total imports. Two UK import businesses with these characteristics (one 100% organic) stated that organic airfreight represented such a large share of their total turnover their overall viability would be thrown in doubt by a ban.

A common fear amongst many mixed conventional-organic import businesses less dependent on organic sales was that, for example as a result of lack of access to early season product, they would lose 'shelf-space' for a few weeks. If they regained this shelf space (to fill with sea freighted product), 'then it would take us at least two further weeks to get sales back up to where they would have been.' At the same time, there was usually a fear that this shelf-space would be lost entirely, either to a conventional version of the same product or to another, entirely different organic product – in both cases supplied by competitors. Some of these businesses would contemplate dropping organic imports completely under these circumstances: 'we'd consider concentrating on the conventional business. There'd be less threat to the continuity of the business.'

A further common fear, particularly for importers who supply market segments (wholesale markets, the catering sector, box schemes, organic supermarkets and stores) demanding lower volumes than those of the big supermarkets, was that their sea freight-based organic import business would be severely affected by a loss of air freight business: 'customers in these segments often ask for two thirds of a palate of something that we've air freighted. Then we agree that it can be topped up with other fruits that we've got too much of. This would be impossible if we couldn't sell the air freighted stuff.' The importers reporting this were dedicated organic ones.

Interviews with importers thus confirm the prognosis outlined earlier (sales losses in excess of the value of air freighted imports), as well as adding some new dimensions to it. While not all specialised organic businesses will suffer, of all import businesses suffering as a result of the ban, it will be those specialising in organic produce that suffer most.

SCENARIO B: SUPERMARKETS IGNORE A SOIL ASSOCIATION BAN

Scenario B is that the Soil Association adopts a ban but supermarkets and other major clients respond by allowing importers to certify to the EU/Defra Regulation with whatever they see fit. Interviews with UK importers indicated that all but one would follow this course of action, should their clients not try to convince them otherwise (the remaining importer refused to answer the question, ‘as I cannot conceive that the Soil Association will go through with this’). If this scenario unfolds, it is very unlikely to have any effects on trade other than very short-term frictional ones, unless subsequently the Soil Association tries to launch a consumer boycott of supermarkets, etc. This report does not consider this last eventuality.

The critical question that will be discussed here is rather that of the direction in which UK supermarkets might jump, should a ban be introduced. As noted, five of the leading seven UK food retailers were interviewed during this study. A sixth made a statement to the authors but declined to answer questions. All six stated that they are working with ways to better understand their carbon footprint and to minimise their dependence on airfreight (with most providing details). Simultaneously, all six unambiguously oppose a ban, citing a similar range of reasons. These include what is seen as the Soil Association’s confusion between the role of an organic standard-setter on the one hand and that of a broad environmentalist movement on the other; what is regarded as the Association’s one-sided and retrograde focus on airfreight alone, within the wider issue of the relation between food production, food trade and climate change; what is seen as the probably skewed impact of any ban on developing countries and smaller producers; and what is seen as a possible domino effect of a ban on Fair Trade standards, with depressing effects on otherwise buoyant Fair Trade sales.

Asked what they would do if the Soil Association implemented a ban, four of the five supermarkets answering this question stated that no decision would be taken until this happened. The fifth said that in the event of a ban, it was ‘likely’ it would advise its suppliers to switch standard and certifier. However, two who stated that no position had been taken then went on to mention customer research that had been commissioned ‘to provide background information that could inform a decision, should a ban be introduced’. Both pieces of customer research were directed at answering the same question: whether customers would trust the retailer in question, should it decide that ‘we are the ones to say the product is organic’. The findings were that ‘our customers trust us as much as (more than) the Soil Association to say that a product is organic’.

Another supermarket chain which stated that as yet it had taken no position on what to do in the event of a ban, went on to state that one course of action it would definitely not follow – what-

ever decision was made by the Soil Association – was to introduce labelling of air freighted imports. On the basis of these statements it can be inferred that, while UK supermarkets still have no intention to actively intervene in the design of organic standards or regulations,¹⁸ they are no longer prepared to endorse all private standards-based embellishment of the EU/Defra regulation.

6. Impacts in Developing Countries

INTRODUCTION

Somewhere between 50 and 60 exporters of organic produce worldwide, of which probably around half export only organic produce, are likely to be immediately affected by any Soil Association ban. The resources and time at the disposal of the authors of this report have not permitted a comprehensive survey of all these exporters to be undertaken.

In examining impacts of a possible ban on exporters, their employees and the communities in which they are based, the approach therefore adopted here is to narrow the focus in two stages. Firstly, only impacts in Sub-Saharan Africa will be described. Thirdly, amongst Sub-Saharan African countries, lengthy case studies will be presented of Ghana and Kenya. Ghana and Kenya are Sub-Saharan Africa's main current users of airfreight for organic exporting and in addition represent good examples of the two main systems of organic production for export found in developing countries. Ghana exemplifies a production system based on outgrowers, including some smallholder outgrowers, while Kenya represents a system of medium-to-large scale commercial farming.

SUB-SAHARAN AFRICA

In Sub-Saharan Africa approximately 11-15 export companies will be affected by any UK ban. These are located in South Africa, Zambia, Cameroon, Gambia, Ghana and Kenya. Together they account for around 2,000 tons or just below a third of all UK air freighted organic imports. The total volume breaks down into about 200 tons of temperate fruit, all from South Africa;

¹⁸ With the exception noted in footnote 3 above.

about 1300 tons of fresh vegetables (beans, peas, baby corn, salads and asparagus), mostly from Kenya, Zambia and South Africa; and about 500 tons of fresh exotic fruit, mostly from Ghana and Cameroon.

Apart from South Africa, where according to Barrow (2006) there are about 250 certified operators, the organic sector in all the countries concerned is very small. Again, apart from in South Africa and to a lesser degree Kenya (see below), local market development is largely non-existent. In South Africa itself, while there is a strong local market, premiums are very low and in the case of some products non-existent. Thus certified organic production is in most cases co-terminus with production for export, and producing for the domestic or regional market is not a commercially viable fallback option.

The companies concerned fall into two main categories: those that are mainly conventional but which also have a part of their operation (usually 25% or less) certified organic, and those that are wholly or almost wholly organic. Whereas almost all mixed conventional-organic operations are medium- or large-scale commercial farms with at most 2-3 medium-scale outgrowers, most (but not all) wholly or almost wholly organic operations include more extensive outgrower schemes.

Of the 11-15 export operations, four provided full access for the authors to conduct fieldwork (including access to contract farmers or smallholder outgrowers), while six others participated in an e-mail and telephone-based survey. Referring back to the discussion of circumstances for air-freighting in Section 4 above, while South African temperate fruit producers exported very small volumes by air during unique periods (e.g., grapes for the UK Christmas season), all other operators exported by air on a counter-seasonal/year-round basis.

Unsurprisingly, operators' degree of dependence on airfreight directly determined the implications of a ban for their businesses (and consequently for their employees and so on). Those exporting by air in low volume circumstances had to accept a lower margin following from loss of the premium commanded by product sold during these unique times. They would also lose some orders for sales at other times of year 'since UK importers prefer dealing with one exporter who can do both, rather than having to deal with two different exporters'. But otherwise they would continue business as usual.

By contrast, operators exporting by air on a counter-seasonal or year-round supply basis all reported that they would be obliged to revert to conventional production or close. In the case of outgrower-based operations, reversion to conventional production could result in exclusion of

smaller-scale outgrowers since, in the absence of premiums, the transaction costs of dealing with them would be no longer economic.

Where medium- or large-scale commercial farms have no alternative but to revert to conventional production, employment would be reduced on their organic operation on a more than pro-rata basis. This was because organic parts of mixed operations were invariably more labour-intensive than organic ones. If the Kenyan cases discussed in more detail below are a guideline, then organic-dedicated employment would be reduced by between 33% and 45%, depending mainly on whether a remunerative conventional market could be established for certain organic product lines.

Two operations falling into this category, one in South Africa and one in Zambia, currently employing a total of around 820 workers (permanent and casual) in their organic operations, on these assumptions would reduce their workforce by around 320 workers in all. Assuming these dismissals would be divided on a 90-10 basis between casual and permanent workers, this would take a total of around \$350,000 per annum in wages out of the local economies in question. This is not counting income that would be removed from the local economy as a result of reduced expenditure on e.g., organic fertiliser by the enterprises themselves.

It is worth underlining that, for operators depending on airfreight for counter-seasonal or year-round export, degree of vulnerability increases directly with the extent of the operation that is under organic production, while levels of impact on workforces and local communities depends on a combination of this, the size of the enterprise concerned, and the labour intensiveness of its organic operation. The most seriously affected operations will be those that have the largest organic areas cultivated and which cultivate these areas most labour intensively. Finally, of course, the better that they remunerate their workers and the more services and goods they buy from local communities, the greater will be the local impacts.

KENYA CASE STUDY

This section examines the probable economic and social consequences in Kenya of withdrawal of Soil Association certification from products exported to the UK by air. After a brief overview of the organic sector in Kenya it considers likely impacts on the two companies that currently account for virtually all exports of this kind. In addition it considers the likely impacts on incomes, transfers and household expenditure and assets for workers who may be directly affected by resulting corporate restructuring. It then goes on to examine likely local economic multiplier effects and social effects at a community level following from restructuring and associated un-

employment. Finally it considers the likely effects on the future of the organic sector in Kenya of the restructuring of these operations. Economic studies of the effects of enterprise restructuring and unemployment also normally consider costs to the economy as a whole of lost output, and costs to government in terms of lost tax revenue and higher expenditure. These are not covered in the analysis below, partly because of the absence of a public social insurance system in Kenya and partly because it is assumed that the most likely scenario following from an effective air freight ban would be the reversion of the enterprises concerned to 100% conventional production, with only small reductions in overall output. Hence, the overall output and tax revenue losses are unlikely to be great.

THE ORGANIC SECTOR

The Kenyan certified organic sector falls into two segments. The first of these is certified to the East African Organic Products Standard (EAOPS) and supplies the national and regional market. EAOPS was launched in Kenya in May 2007, succeeding the Kenya National Organic Standard. At least a dozen Kenyan operators are certified to this standard. In September 2007 there were around 15 retail and catering outlets in Nairobi trading products certified to local standards, including Uchumi and Nakumatt supermarkets. The largest organic operator certified to EAOPS is Green Dreams, which encompasses a farm, a parallel supply chain incorporating about 300 smallholders, an organic shop in Nairobi's Gigiri shopping centre and about 15 metres of shelf-space and refrigerated display in the Nakumatt supermarket in Westlands.

The second segment is certified to the EU and/or US and Japanese regulations as well as, in some cases, to other developing countries private standards. This segment produces almost but not entirely for export. Currently, according to the Kenya Organic Agricultural Network (KOAN) there are 23 operators certified to international standards and three new operators in conversion. No recent data on exports is available but in 2005 exports are thought to have been worth \$4.6 million to the then 15 certified operations (Kiarii 2006). Fresh vegetables comprise the largest share of exports by value. Other products exported include dried herbs and spices, essential oils, tea, coffee, nuts, gums and resins. The first international certification body to operate in Kenya was Soil Association Certification (SAC). According to representatives of KOAN, the Soil Association and SAC are said both to have contributed to the sector's development and in the latter case to have earned considerable revenues from it on the basis of fees.

Besides the two large fresh produce exporters that will be discussed below, at least three other Kenyan certified operators would be directly affected by any ban. These export essential oils or dried herbs and normally export by sea. However, they use airfreight 'very occasionally' during

acute supply shortages and/or where consignments are of a volume that is sub-economic to transport by container. Effects on these operations and those dependent on them are not considered here.

All organic fresh vegetable exports are from two large-scale commercial farming operations that predominantly export conventional products. Both have been certified organic for 7-8 years. One produces solely from a single large farm, while the other has two smaller adjacent farm units and in addition contracts production to a medium-scale certified contract farmer.¹⁹ Both depend entirely on airfreight for their exports. Only the larger of the two main operators is currently certified to Soil Association standards, but both use export and import agents who are Soil Association-certified and would thus be affected by a ban.

Horticultural production for export has driven Kenya's overall export performance over the last two decades. Horticultural exports reached a value of around \$700 million in 2006, of which about \$230 million comprised fresh vegetables. 70% of total fresh vegetable exports are to the UK market and these are transported almost entirely by air. According to the industry organisation FPEAK, direct employment in the horticulture sector stands at 0.5 million, and indirect employment at 3.5 million (around 10% of the Kenyan population).

In the mid-1980s smallholder producers sub-contracted by exporters accounted for approximately 40% of Kenyan exports to the UK of green beans, snow and snap peas (the main fresh vegetable lines). Today, conventional production is dominated by about 15 vertically integrated grower-exporters, supplemented by a few medium-size contractors (Gibbon & Ponte 2005, 142-43). This change has come about as UK market demands for extended shelf life, and 'good agricultural (and handling) practices', have raised entry requirements. These have risen in respect of supply chain coordination, traceability, farm infrastructure and not least cool chain investment. Hence the organisational form of the two large-scale organic fresh vegetable exporters reflects that of the Kenyan horticultural sector as a whole.

The largest grower-exporter of organic fresh produce farms 60 hectares of certified organic land within a much larger commercial farm near Timau in the eastern part of Laikipia district. He has a further 42 hectares without infrastructure that is certified and another 25 hectares with infrastructure that is in conversion. In 2006 he exported approximately 480 tons (20-30% of his total

¹⁹ In October 2007 this contract farmer will take over a second certified property (currently not in production), from which he will contract to the other large-scale operation.

exports), 93-95% to the UK and all by air. Bulk baby leaf salads dominated his organic exports. The second grower-exporter farms about 30 hectares in two adjacent units located about 17 km west of Naivasha in the Rift Valley. In 2006 he exported approximately 280 tons of organic fresh vegetables (about 5% of his total exports), again overwhelmingly to the UK and by air. Fine beans dominated these exports. This grower-exporter contracted an organic farmer in Kinamba, near Rumuruti in the western part of Laikipia district. The contractor cultivates about 10 hectares of organic fine beans within a 20-hectare farm where the remainder of the cultivated area is dedicated to (sea freighted) organic dried herbs for another exporter. All three operations are highly labour intensive, in a range between 4.9 and 5.5 workers per hectare (including pack house and supervisors). The Naivasha operation used no mechanically powered equipment at all. All practice rotations, high levels of composting and comprehensive IPM.

KOAN strongly opposes a ban on certification of air freighted organic produce. Its main response to the Soil Association Green Paper has been to launch a petition against a possible airfreight ban on its website and via its magazine *Kilimohai* (vol. 1 no. 3). The prologue to the petition refers to what KOAN sees as an alliance of environmentalists and European farm groups using the issue of global warming to create new non tariff-barriers to trade. It goes on to argue that the proposal lacks credible scientific foundation and points out its likely implications for development. It ends by calling for a withdrawal of the proposal. KOAN believes a ban lacks support from factual evidence and possibly has a side agenda of advancing the interests of UK farmers and box schemes. It feels that any ban will be clearly at the expense of developing country exporters, a sentiment shared by all elements of the organic and conventional business communities in Kenya as well as by the Government of Kenya.

FIRM LEVEL IMPACTS

Costs to firms

Sunk costs refer to investments that have been made in particular operation that cannot be recovered in the event of its termination. The sunk costs of the three operations referred to are around \$2.0 million, \$1.5 million and \$0.3 million respectively, in all cases dominated by a combination of opportunity costs of foregone sales during conversion periods and production infrastructure costs (mainly irrigation and cold chain investments dedicated to organic production). Differences in overall sunk costs between operations reflect scale of operations, whether rent had to be paid for land while it was in conversion, and lengths of conversion periods required for obtaining certification.

As in earlier sections of this report, two basic scenarios will be considered in relation to corporate and other impacts: firstly, Scenario A where air freight is banned by the Soil Association and UK supermarkets encourage their importers to retain Soil Association certification; and secondly, Scenario B where air freight is banned by the Soil Association but UK supermarkets no longer encourage their importers to retain Soil Association certification.

In Scenario A the two grower-exporters state that they would ‘certainly’ or ‘probably’ revert to conventional production of the same products. While demand for year-round organic fresh produce in mainland Europe, South Africa, Dubai, Singapore and Hong Kong is growing, even when combined these markets are smaller than the UK’s. Secondly, premiums in these markets are lower and market growth is less dynamic than in the UK. Thirdly, the Kenyan cold chain would ‘need a lot of work doing to it, which we don’t have to worry about when we export to the UK since we’ve been doing business there for 20 years’. Hence these organic markets are not likely to provide a realistic alternative.

Reversion to conventional production would entail writing off 60% or more of sunk costs (all those not concerned with farm and cold chain infrastructure, including the opportunity costs of rent paid and sales foregone during conversion periods, certification, organic consultancies and staff training). It would further entail accepting lower levels of profitability. This would be mainly due to loss of the organic premium, which in the UK currently stands at 12-16% for fine beans and 25-30% for baby leaf salad. However, the increase in productivity and reduction of employment expected to follow from reversion to conventional production would partly offset this in the case of fine beans. In the case of baby leaf salad this is not the case and there will be a cost in terms of lower sales revenue. In the event of reversion to conventional production, a further reduction in profits may be entailed by a loss in bargaining power in relation to importers. Grower-exporters reported that being able to offer both organic and conventional fresh produce improved bargaining power, including over terms and conditions under which they sold conventional product.

Lastly, but by no means of least importance, reversion to conventional production would be associated with reduced opportunities for corporate learning. As a result of their experience of organic farming, both the grower-exporters had adopted rotations and organic pest management methods within their conventional production. One had further transferred use of raised beds and windbreaks and the other was planning to introduce composting. In the words of one of the exporter-growers ‘it would affect us technologically. It would be like going backwards. Organics is a business that has made us think outside the box. If conventional customers want us to move toward a residue-free product then the technical knowledge will have to come from organics.’

The corporate impact of writing off a part of sunk costs and of loss of organic premium will vary with scale of organic operation and share of organic sales in total sales. The larger an organic operation is, and the greater share of total sales that it accounts for, the greater will be the corporate impact.

The implications of Scenario A for the contract farmer would be more serious than for the two grower-exporters. It is unclear whether his contract for fine beans would be continued in the case of the exporters' reversion to conventional production. If it was not, and if he wished to continue production of (organic) dried herbs, 'then my rotation will be destroyed. I'd have to rotate with something where I wouldn't get a return or could only sell onto the local market'. In addition he would experience deterioration in cash flow, since air freighted fresh produce is paid for on 30 day terms whereas sea freighted dried herbs are paid for only after 80-90 days.

In the Scenario B, where the Soil Association bans airfreight but UK supermarkets no longer encourage their importers to retain Soil Association certification, business would simply continue as usual, using bodies such as Ecocert, IMO or BCS to certify against EU Regulation 2092/91 or the Defra Regulation. Indeed, the grower-operator currently certified by the Soil Association was in the process of switching to Ecocert in anticipation of this outcome.

Impacts on direct employment

The two grower-exporters described employed 330 and 268 workers respectively in their organic operations. In the first case 50 (15%) and in the second 28 (10%) were permanent while the remainder were casual. 'Casual' status here refers to contractual conditions inferior to those of permanent workers,²⁰ rather than to intermittent employment (see below). The contract farmer employed a further 100 workers, of whom about half were permanent. 'Casual' status in this case refers to annual employment for 9 rather than 12 months, as the contract farmer did not produce fine beans during the UK growing season. Thus in all about 700 workers are currently employed in the Kenyan organic fresh produce export sector. Women comprise around 90% of these, a figure that rises to 95% in the case of casual workers. The profile of the grower-exporters' workforces is also relatively youthful. Of a total of 41 employees of these companies who participated in separate focus group discussions, the average age was 26 years (males 25.1 years, females 26.3 years). However, on the Laikipia grower-exporter operation the age profile of 9 female casual labourers who participated in a separate focus group was considerably higher (32.6 years).

²⁰ Casual workers receive slightly lower pay (see below), no paid leave or sick pay and lack access to company-financed savings-and-loan schemes where these exist.

According to the Laikipia-based contract farmer, female casual labourers on this farm were on average around 40 years old.

Under Scenario A the larger exporter-grower stated that it was likely that 120-160 of the 330 workers currently staffing his organic operation 'would be let go'. This was mainly because some more labour intensive operations, particularly harvesting, would be mechanised. Currently, the organic price premium justified their being carried out by hand. The other exporter-grower stated that either 10-20% of his total organic workforce would lose their employment, or one of his two organic units would close. This corresponds to a loss of between 27 and 90 jobs. In this case the losses primarily reflect the number of workers involved in specific product lines where it was doubted that conventional sales would be remunerative. They did not reflect an intention to immediately mechanise production, should a reversion to conventional production occur. Finally, as already indicated, the overall viability of the contract farming operation appears in doubt under this scenario. The farmer concerned believed that at best half of his workforce would be retained. In other words, Scenario A is likely to involve a direct loss of between around 200 and 314 jobs. These would be overwhelmingly concentrated amongst casual workers and therefore mostly likely to affect (older) women. Scenario B does not entail job losses, although there may be some very temporary dislocation in sales.

COST TO THE UNEMPLOYED AND THEIR DEPENDENTS

Impact on incomes and transfers

Workers' incomes were fairly consistent across the three operations. Casual workers earned in a range between Ksh.4,134 and 4,420 per month including allowances, while permanent workers earned in a range between Ksh.4,168 and 8,200 per month including allowances. In both cases the working day was 8 hours, for either five and a half or six days a week. Overtime was typically remunerated at time and a half or double time on Sundays. If 20 hours overtime per month were worked, casual workers would earn around Ksh.5,000 per month in all. At current exchange rates this corresponds to about \$73.50 per month with overtime for a casual worker and up to \$120.50 a month without overtime for a senior permanent worker. If these figures are adjusted using the World Bank's 'Purchasing Power Parity' (PPP) index for Kenya they equate to \$194 and \$318 per

month respectively.²¹ These figures do not indicate wealth, but they are still respectively 63% and 167% higher than Kenya's GNI per capita.

Over and above their wages, all employees of both grower-exporters received free transport to and from work. This saves on workers' own expenditure on transport but more importantly, allows women to fully participate in shift work and in overtime, since it means that they can safely travel backwards and forwards after dark. They also receive free medical care on-site. All pack house workers (of whom around 80 worked on organic lines) on the Laikipia grower-exporter operation received free lunches during working days and the operation also provided a crèche. No attempt was made to quantify these benefits although together they were clearly equivalent to a substantial proportion of the cash wage.

Workers participating in focus group discussions were asked the number of persons in their household, the number of children whose school fees they were partly or wholly responsible for,²² and whether they themselves employed wage labour. Average household size was 5.0, reflecting the low average age of workers themselves. For the 9 female casual labourers who participated in focus group discussions and interviews on the Laikipia grower-exporter operation, average household size was 9.3. The 18 women workers who participated in all-female focus groups all reported that they kept their wages themselves, rather than having to hand them over to a husband or boyfriend.

For all 41 workers, income from their full-time farm labour comprised the major source of household income. Each worker supported an average of 3.0 children through school, of which an average of 1.9 children were outside their immediate households. An overwhelming majority also gave money to their parents when they visited their home areas at Christmas. Hence, while workers' average household size was 5.0, somewhere between 6-8 persons were dependent on

²¹ The World Bank's PPP index gives an indication of the number of units of a given country's currency that are needed to buy the same amount of goods and services that a dollar would buy of goods and services in the US. In the case of Kenya the figure is Ksh 29.54 rather than Ksh 68, the current dollar exchange rate. The World Bank uses this index in its calculations of proportions of national populations living under \$1 or \$2 per day.

²² Since public primary education in Kenya is free, this equates with supporting children through either public secondary school or a private primary or secondary school.

direct transfers from these wages. Hence the incomes of between 1,400 and 2,826 people would be directly affected in the case Scenario A.²³

Impacts on expenditure, assets and employment controlled by the household

Workers reported that the most immediate impact of employment on household expenditure was that they were able to afford adequate food and pay house rent. Many said that they were also able to afford to buy school uniforms for their children and subscribe to the National Health Insurance Fund.

Almost all workers reported being able to acquire at least some assets locally as a result of their employment, or to acquire/retain and more effectively exploit assets in the areas in which they were born. In the case of casual workers the commonest assets acquired locally were mobile phones, kitchen gardens, poultry, goats, radios, beds and mattresses. Casual workers on the Nai-vasha grower-exporter operation emphasised that acquisition of such assets required 'strenuous efforts at saving'. For permanent workers with access to savings-and-loan schemes, it had been possible to acquire more substantial assets including cows, furniture, televisions, building materials and land on which to build houses (either locally or 'at home') or on which to farm. One permanent worker had invested locally in a kiosk.

30 of the 41 workers participating in focus groups used their income to employ labour either on their own land or land owned by their parents, generally in their home areas. The kiosk owner hired labour to mind his store. While these figures might not be representative it can be conservatively estimated that each wageworker personally employs at least 0.5 others.

Scenario A will entail a fall in living standards and probable forced sale of at least some assets by those made unemployed or dependent on direct transfers from those made unemployed. It will further entail loss of employment by those informally employed by persons who become unemployed. In all cases this is with the proviso that the workers concerned cannot immediately find similarly remunerated work. The prospects for this are discussed later.

²³ These figures are arrived at by multiplying the lowest and highest numbers of those likely to be made unemployed by an average number of persons dependent on cash or direct cash transfers from the wage (8 persons). Receipt of cash to pay school fees is counted as dependence on a cash transfer.

Impacts on workers' learning opportunities

Workers were asked in a non-leading way to state whether they had changed the way that they farmed (or kept kitchen gardens) locally or 'at home' as a result of their experience in their current job. Research on the farming practices of smallholders in East Africa tends to show that normally, while chemical use is extremely limited, few explicitly organic farming techniques are used and that hence these typical practices are best characterised as 'organic by default' (Gibbon & Bolwig 2007).

In the 36 cases where those participating in focus groups had farms or kitchen gardens, 26 had adopted one or more explicitly organic techniques. Those most commonly adopted were application of animal manure and/or composting (17 cases), followed by one or another non-synthetic method of pest control (15 cases). Adoption of rain harvesting and/or drip irrigation was reported in 4 cases, while in single cases adoption of rotations and plant health scouting techniques was reported. There were also several examples of adoption of 'good agricultural (or post-harvest) practices' that are not specifically organic, such as crop spacing, hand drilling of seeds and improved storage. For workers on the Naivasha grower-exporter operation these changes were associated in around half of all cases with introduction to crop portfolios of green beans and carrots.²⁴ Hence both some important organic principles and a more commercial approach to agriculture had been transmitted. Most workers concerned reported resulting increases in yields and none reported a decline. This being the case, demonstration effects in relation to neighbouring farmers can be anticipated. This does not amount to widespread dissemination of an integrated organic farming approach, but the extent of change in practice found compares favourably with levels of adoption of organic techniques amongst certified organic smallholder producers in Uganda who had been subject to formal training, described by Gibbon & Bolwig (*op. cit.*).

Presumably workers who became unemployed as a result of Scenario A would retain their existing knowledge of organic farming principles, although they would have little opportunity to enhance it. Moreover, as a result of probable forced sale of assets they may well become unable to practice them. There would therefore be a limited but clear reduction in the dissemination of organic farming amongst Kenyan smallholders, even though the production system directly affected would be a large-scale commercial one.

²⁴ These were mainly sold to neighbours or onto the local market.

SOCIAL/COMMUNITY IMPACTS

The employment, income, transfers and expenditure impacts discussed in relation to Scenario A would impact at a community level both in the areas where workers live while working and in their 'home' communities. Since the workforces of both the grower-exporter operations are drawn from all over Kenya rather than from a specific area, the latter impacts are likely to be diffuse and limited. However, impacts in communities where workers live while working are likely to be substantial. Furthermore, impacts following from unemployment in these communities will be accompanied by impacts resulting from non-employment related aspects of corporate restructuring. These will be considered first.

Community impacts from corporate restructuring

While Scenario A is unlikely to much affect the different local philanthropic contributions of the grower-exporters (or the contract farmer)²⁵ or their overall demand for goods and services sourced within Kenya or east Africa, it will directly affect purchase of certain goods and services. These include organic fertiliser used in preparing land in conversion such as gypsum (sourced within Kenya) and rock phosphate (sourced from Tanzania), plastic materials for insect traps and insect netting (sourced within Kenya), as well as animal manure, composting material, sticks and poles for plant and insect trap support, seeds for some green manure and some compost crops, worms²⁶, as well as the part of current purchases of food and transport services consumed by those workers who will be made unemployed.

Of these goods and services acquired as inputs to organic production, the great bulk of local expenditure is currently accounted for by purchases of animal manure and plant material for composting. One grower-exporter purchased only part of the animal manure he used since he acquired the remainder of his requirements from his landlord (a rancher) in exchange for maize residues. However, this in turn required him to purchase more straw for composting than he otherwise would have done. Overall costs (in nominal terms) of composting materials per hectare were in a range of \$800-900 per hectare per year, implying an overall injection of \$84,000-\$94,000

²⁵ Most of the philanthropic contributions of the Naivasha grower-exporter were outside the Naivasha area, but the Laikipia grower-exporter supported construction of classrooms at two local primary schools, paid salaries for two teachers at one of these schools, took children from both schools for on-farm extension and contributed to a water pipeline scheme serving three local communities (still incomplete). The Laikipia contract farmer had built a clinic in Kinamba township and contributed to its running.

²⁶ Worms are used for improved composting as well as for extraction of organic pesticide from compost. One of the grower-exporters had sourced one batch of worms from Australia rather than locally.

into local communities. Easily the largest beneficiaries of this income are local pastoralist communities, since manure accounts for the largest part of total expenditure on composting materials.

Community-level multiplier effects

The calculation of local multiplier effects of employment or unemployment in terms of jobs created or lost normally relies on the availability of a range of information concerning spending patterns, origins of purchased goods, location of employment in the production of these goods and services, and ratios of employment to output in local industries from which goods and services are sourced. Much of this information is absent in this case. These effects will therefore be estimated here using the conservative assumptions that 80% of all income received by workers and sellers of straw and manure is spent locally on goods and services, that 60% of locally sold goods and services are locally and informally produced or provided, and that local employment in the supply of these goods and services corresponds exactly to the number of informal sector workers whose wages could be funded out of local expenditure at the average current rate of informal sector remuneration.

Assuming in relation to Scenario A that 95% of unemployment will fall on casual workers and that casual workers receive an average annual wage of \$882 and permanent workers an average annual wage of \$1,200, then the aggregate loss of local income from unemployment will range between 80% of \$179,580 and \$281,941, depending on the total number of workers made unemployed. When 80% of the aggregate loss of local income from sale of manure and straw is added to this, then the total local income loss resulting from scenario one will be in a range between \$210,864 and \$300,753. If in turn 60% of local spending is on locally produced goods and services, then between \$125,518 and \$180,452 will be available to pay local informal labour for their production. If finally these figures are divided by the local average informal sector annual wage (\$408, see below), then there will be a loss of between 308 and 442 local informal sector jobs (corresponding to an aggregate local employment multiplier between 1.4 and 1.5).

Much of this discussion of financial costs of unemployment to the unemployed, those receiving transfers from them and those depending on their local expenditure rests on the assumption that the unemployment in question will be medium-to-long term rather than frictional. This assumption was tested by asking workers participating in focus groups for the length of time they had spent between their last employment and their current one. The average for all 41 workers who participated in focus groups and interviews was 6.9 months.

Even if or when alternative work is found, it is likely to be remunerated at a lower rate than employment in the organic fresh produce sub-sector. A sub-group of 18 workers drawn equally from both operations were asked how much money they made in the last job they had. Of these 18, four had had formal sector jobs, with an overall average pay of Ksh4,500 per month (i.e., very similar to the earnings of casual workers in the organic fresh produce sub-sector). The most recent jobs of the remaining 14 had been in the informal sector, with an overall average pay of Ksh.2,320 per month (\$34 per month or \$408 per year in nominal terms).

This points to the fact that workers, even casual ones, in the organic fresh produce sub-sector form part of a local labour aristocracy. This contributes to a final community impact associated with Scenario A, namely overall community well being and stability. Community leaders were interviewed from both the KCC informal settlement near to the Naivasha grower-exporter operation and the Ngosichi settlement on the outskirts of Timau town, close to the Laikipia grower-exporter operation. Both these communities were homes to workers from the farms in question and from one (KCC) or more (Ngosichi) other conventional fresh vegetable and cut flower operations. However, in both cases a majority of their working populations supported themselves through informal sector activities. Both the KCC informal settlement and Ngosichi had sprung up only in the last few years. Local leaders considered KCC somewhat unstable since, located in the middle of an expanse of rangeland area without an indigenous population, its residents had weak roots in the area and typically resided there only on a temporary basis.

Children and siblings of workers on the fresh vegetable and flower farms (community leaders had difficulty in specifically distinguishing those of the organic operations) were better fed, better clothed and performed better at school than other children. They attended primary school more regularly; they graduated more often to secondary school and were less likely to drop out when they did graduate (due to their parents' greater ability to pay school fees, sometimes on the basis of bursaries or loans from the companies). Workers themselves remained resident in the community much longer than others and in some cases had bought land to settle their parents there. They were the best customers of local businesses and smallholders, as well as of local landlords who rented out property. They were also the best informed in relation to HIV AIDS, as well as being the most humanely treated by their employers if they contracted it. Worries were rampant in both localities that, should employment on the farms fall, the result would be increased crime, drinking, prostitution and AIDS.

Local leaders' impression of the stabilising effect on the community of employment on large farms was backed up by workers' reports of the duration of their current farm employment. Casual workers interviewed on the Naivasha grower-exporter operation had been employed there

for an average of 19 months (permanent workers' employment averaged 30 months). Casual workers interviewed on the Laikipia grower-exporter operation had been employed there for an average of fully 35 months (permanent workers' employment averaged 32 months).

SECTOR-LEVEL IMPACTS

A final impact of Scenario A considered is that on the organic sector generally in Kenya. Impacts here concern public perceptions of the organic sector, information flows to the sector, (dis)incentives to conversion for prospective operators and spill over effects onto the segment of the sector serving the domestic market.

KOAN strongly advances the argument that the involvement in the sector of two large-scale, predominantly conventional, export operations had given it a public face during the period of five to six years before any (locally) certified produce appeared on the local market. These companies' professionalism enhanced the sector's credibility both in relation to government and in relation to smallholders and their organisations, which (mistakenly or not) saw these companies as potential gateways – via contracting – to the export market. A reversion to wholly conventional production by these companies would affect the public status of the sector and send negative signals to smallholders considering certification – who typically have exporting as an ultimate ambition.

Secondly, the active participation of in the Kenyan organic movement of a Director of one of the companies allowed KOAN to keep abreast of developments in international standards and trade regulations since he was an expert source of knowledge on these. The person concerned was no longer likely to continue his involvement in the context of his company's reversion to conventional production.

Thirdly, according to FPEAK, even the announcement by the Soil Association that it was considering a ban on airfreight created a disincentive for conventional horticultural firms to convert to organic. 'Once such an issue is aired, it is bound to come back even if it is not acted upon this time...so why take risks?' There was also considerable concern that a ban, if introduced, might be transposed to conventional production with disastrous effects on the Kenyan economy.

Lastly, one of the grower-exporters considered here was considered to have contributed to the development of the local market for organic produce, by supplying a leading locally certified grower-trader. The trader concerned said that the quality and volumes in which the grower-exporters' products were available were unique and that carrying them provided her with the

widened product range necessary to maintain a viable organic retail operation. In addition, she had learned from 'big companies' in general about the importance of professionalism, technical knowledge, computer-based supply coordination, networking and branding. This knowledge was less likely to be transmitted in a context where larger companies operated only conventionally.

SUMMARY AND CONCLUSION

Under Scenario A it is probable that the two major Kenyan organic grower-exporters will revert to conventional production. This will entail ceasing local purchases of manure and straw and between 200 and 314 workers becoming unemployed. A combination of these two impacts will lead to severe effects on the well being of around 9 further persons, for each person made unemployed. This figure is composed of around 7 persons dependent on direct transfers, 0.5 currently employed directly by the workers who will be made unemployed and a further 1.5 informal sector workers in the local community. In other words, at least 1,700 to 3,200 persons are likely to be severely affected. This figure takes into account loss of employment in the local community related to grower-exporters ending their purchase of manure and straw. It does not take into account the impact on the pastoralists and local farmers directly selling to them.

Scenario A also involves grower-operators having to write off up to half their existing investments in organic farming and experiencing lower levels of profitability and reduced opportunities for learning about environmentally cleaner farming techniques. Similar learning opportunities will also be denied all workers currently employed on the organic farms.

There are further likely to be damaging effects on local communities where workers currently reside, and on the wider organic sector in Kenya. Disincentive effects will hamper the expansion of this sector, the sector will lose an important part of its public face and the viability of local formal sector organic retailers will be affected as a result of supply problems.

GHANA CASE STUDY

THE ORGANIC SECTOR

The organic sector in Ghana is growing but is still relatively small, according to the Ghana Organic Agricultural Network (GOAN). There are 12 internationally certified exporters of organic products operating from Ghana plus another two in conversion. No authoritative data

exist on the total volume or value of organic exports from Ghana. There is no system of local standards and certification and the domestic market is not significant.

GOAN estimates that the majority of certified organic land in Ghana is grown under the management of vertically integrated exporter-growers, while a smaller share is occupied by out-growers. Yet several organic smallholder outgrower schemes are currently being developed and this is expected to shift the balance in favour of smallholders. In nearly all cases smallholders are certified through an exporter in arrangements resembling contract farming schemes.

Banana was the first organic product to be exported from Ghana, starting in the early 1990s. Today the main organic products exported are palm oil and other fresh fruits. Dried fruits, fruit juices and concentrates, cocoa, essential oils, shea butter, cotton, cashew and plantain chips are also exported, together with a small amount of fresh vegetables. There are 6 fresh fruit exporters in Ghana and two exporters of fruit juice and concentrates. Fresh fruit export is now dominated by pineapple followed by banana, papaya, mango and coconut. Two companies export dried pineapple and mango in small quantities, while another specialises in pre-packed cut fruits.

Fresh fruits account for the vast majority of **organic exports by air**, which stood at *ca.* 560 tons in 2006. The bulk of this trade is pineapple (*ca.* 300 tons), followed by papaya (*ca.* 200 tons, but with large annual variations). The volume of air-freighted coconuts is set to increase from current low levels to more than 60 tons in 2008 (mainly as cut fruit). At least 50% of air-freighted organic exports by volume goes to the UK. The other major destinations are Holland and Switzerland. Small amounts of fresh vegetables, dried fruits and nuts are also being air-freighted.

Three companies account for all air-freighted fresh fruit exports. They comprise a large UK-based firm producing mainly pre-cut and ready-to-eat fruits, which are prepared and packed in a factory in Ghana and sold directly to supermarkets in the UK and Holland, and two smaller companies exporting whole fresh fruits to mainly the UK and Switzerland, respectively.²⁷ For the large company, organics make up 5.7% of export volumes while the business of the two smaller companies is nearly 100% organic. All three firms source their organic products through out-growers, while one of the smaller firms also operates its own organic farm.

²⁷ According to the Ghana Organic Agricultural Network (GOAN), at least two other firms are considering air freight of organic fruits as an option in the near future.

The view of the Ghana Organic Agriculture Network is that banning airfreight of organically certified products to the UK markets and other markets in the developed world will be catastrophic to many farming communities and villages in Sub-Saharan Africa. In Ghana, many smallholder farmers have started to enjoy the benefits of organic farming through the programme for organic group certification. These farmers are now getting better prices, are able to educate their children, to provide shelter for their families and to meet the costs of health care. Most of Ghana's organic fruits are exported to the UK and banning airfreight of fruits to the UK means denying hundreds of smallholder farmers and many more agricultural workers a means of livelihood.²⁸

THE CASE STUDIES

The following assessment is based on case studies of the large exporter of mainly cut fruit ('large exporter') and of the smaller exporter of whole fruit whose main market is the UK ('small exporter'). The two companies account for 80-90% of all air freighted exports from Ghana. The assessment considers impacts at the firm level, on workers, on organic outgrowers, and on local communities in which workers and outgrowers live. Due to the large differences in the scale and nature of operations of the two firms, in most cases the impacts are reported separately

The large exporter

The 'large exporter' was established in 1998 and specialises in export by air of pre-cut and ready-to-eat fruits. It is part of a larger vertically integrated firm that sells whole and cut fruits directly to retailers in the UK. The Ghana processing facility is located in the Eastern Region of Ghana, about 40 km from the airport. The recent completion of a new processing facility has doubled processing capacity from 10 to 20 tons of cut fruit per day, partly with a view to expand organic production. The company operates a large pineapple farm and buys in additional fruit (pineapple, papaya, mango, coconut, pomegranate and passion fruit) from 131 EurepGap certified small- and medium-sized outgrowers in the Eastern and Central regions. A majority of these are also certified organic. In 2006 the 'large exporter' sold 3637 tons of fruit, of which 5.7% (207 tons) were organic. The company has grown by 20-30% every year for the last 10 years while its organic business is currently growing by 10% a year.

While still relatively small in relation to the conventional, the organic part of the business is the most dynamic. A new product was added in 2007. Fair Trade counterpart certification was

²⁸ Based on email communication from the GOAN National Coordinator, Mr. Samuel Adimado.

obtained in 2006, which has been key in accessing the Dutch market. Prior to the Soil Association consultation on air freight, the company was planning to expand its organic processing capacity, as well to physically segregate it from the conventional line, at a cost of *ca.* \$800,000. It is also conducting organic trials with the MD2 pineapple variety, which dominates conventional production, as a means to expand local fruit supply for pre-cut processing.

Up to 2006 all organic exports were in the form of pineapple (mainly cut fruit) sourced through an organic outgrower scheme established by the exporter in 1998. The scheme, henceforth called the Organic Collective (OC), comprises 78 smallholder farmers who cultivate 380 hectares of Sugar Loaf pineapple in the Central Region. It is certified to both organic and EurepGap standards. The OC consists of 4 farmer groups which in 2004 were unified in a formal association and certified to Fair Trade standards. In mid 2007, the company started export of organic pre-cut coconut, which it expects will reach a volume of 55 tons per year by 2008. The coconuts are produced by a Farmers Association (FA) in the Central Region comprising 25 members cultivating a total of 67 hectares. The FA was certified to EurepGap standards in 2004, when it first started to supply the exporter, and to organic standards in 2006. In both schemes the Soil Association performs the organic as well as the EurepGap certification. The exporter pays for all certification, which amounts to approximately \$4000 annually.²⁹

The small exporter

The 'small exporter' was first established in 1987 as a conventional commodity export company selling a range of agricultural products. Since the late 1990s the core business has been fresh papaya export (whole fresh fruits) to the EU. In 2001 he converted the entire business to organics due to strong competition in the conventional EU market from sea-freighted Brazilian papaya. Papaya is always air-freighted from Ghana due to its high perishability combined with problems of insufficient cargo space, irregular boat schedules, poor handling, and inadequate temperature control during sea-freight from Ghana. At the business's height, he air-freighted 5.6–7.5 tons of organic papaya every week for 9 months a year to the UK (*ca.* 200–300 tons annually), and smaller amounts to other European countries. Organic pineapple is the second most important product, with a volume of *ca.* 200 tons in 2006, but air-freight has been used only in one instance where the customer required fruits that had ripened on the plant. It is estimated that 50–60% of air-freighted exports are destined for UK markets.

²⁹ The figure includes the cost of certifying the processing and handling facilities, but excludes the substantial costs of managing the Internal Control System required for group certification of smallholders.

From late 2007, he is planning to add passion fruit (always transported by air) and mango (by air or sea) to his portfolio of organic exports. The mangos are grown by smallholders (1000 in all) while the passion fruits are produced on a medium-sized, irrigated farm. Both schemes are scheduled to be certified by the Soil Association in November 2007.

The organic operation consists of an office in Accra, an office in Germany, an own farm situated on 250 acres of leased land in Eastern Region, while small- and medium-sized outgrowers are also located in Eastern Region. The exporter's own farm was until recently under organic papaya but due to unfavourable weather conditions it was abandoned and organic MD2 pineapple is now being trialled there. Lower orders means that the number of organic papaya outgrowers was recently reduced from 30 to 8, but the company continues to secure certification for the 22. Two of the papaya farmers also grow organic pineapple. This recent restructuring means that the company currently sources organic papaya from around 38 ha managed by outgrowers. Organic pineapple (shipped by sea) is sourced from 6.5 ha operated by two of the same outgrowers as well as a from specialised pineapple outgrowers. In addition, 1.2 ha of passion fruit (to be increased to 9 ha in 2008) and *ca.* 400 ha of smallholder mango is under organic conversion.

All farms and export facilities are certified to both EurepGap and to several organic standards (EU Regulation 2092/91 as well as KRAV, Bio Suisse and Soil Association). Current certification costs (including for EurepGap) are \$14,000 per year.

Assessment of impacts in relation to this operation will focus on the papaya business.

FIRM-LEVEL IMPACTS

As in the Kenyan case studies, two basic scenarios will be considered in relation to corporate impacts (and by extension, impacts on workers and outgrowers and their communities): firstly, Scenario A where air freight is banned by the Soil Association and UK supermarkets encourage their importers to retain Soil Association certification; and Scenario B where air freight is banned by the Soil Association but UK supermarkets no longer encourage their importers to retain Soil Association certification.

Under Scenario B, business would simply continue as usual, using bodies such as Control Union International (formerly SKAL) to certify against EU Regulation 2092/91 and/or the Defra regulation. Indeed, the 'small exporter' was already considering switching to Control Union Int'l in anticipation of this outcome and because he considers this agency to be a 'one-stop shop' covering all the main national and private certifications within the EU.

Costs to the large exporter

Under Scenario A, the large exporter would probably retain organic certification and try to sell his product as conventional in the UK. This would be an interim manoeuvre while he increases organic sales in the rest of EU. However, the viability of this course of action was uncertain, since there is 'some debate over whether the unique [pineapple] variety could be marketed as a conventional product due to its unconventional and some might say 'unattractive' appearance'. Moreover, as noted elsewhere, organic markets for fresh produce outside the UK are smaller and less dynamic, and prices are lower. In the best case under the scenario, sales volume would fall significantly and the 38% organic premia currently achieved in the UK would be lost. The costs of developing the cool chain for prepared fruits to end markets other than the UK are also likely to be substantial. Hence, even if the company succeeds in retaining a market for its organic outgrowers, export volumes and profits would fall considerably in the short and medium term. Scenario A would also mean the immediate cancellation of plans to expand organic processing capacity, the outgrower supply base, and introduction of organically grown MD2. Indeed, it may be the case that the proposal has already had this effect. The scenario would also make redundant the 70 acres of land which the company has purchased and is in the process of converting to an organic demonstration farm, in close collaboration with the Soil Association.

While organics are currently worth only 5.7% of turnover, 'they are however worth considerably more to the company's overall marketing potential to retail customers who are attracted by the unique story associated with the company's Organic Collective and Farmers Association'. The scenario is therefore likely to mean lower sales and profits in the much larger conventional part of the business, although the magnitude of these losses are impossible to assess.

Scenario A would entail writing off a large part of the sunk costs concerned with the two organic operations. The largest *physical investments* were made in relation to the organic pineapple out-grower scheme, notably a refrigerated store at the processing facility dedicated to organics; a pack house in the field, including a 40 foot refrigerated container, a generator, a shelter and toilet and washing facilities; 8 collection points in the field with shelters, toilets and washing facilities; 15 acres of land to house these facilities; a Land Rover and two trucks dedicated to the scheme; and various dedicated field equipment. The physical investment in the coconut scheme is toilet and washing facilities. The total costs of these investments is roughly estimated at \$320,000. It is not possible to estimate the cost of the lost opportunity of renovating the old facility for dedicated organic processing (the large building is no longer being used) nor the cost of reduced capacity utilisation of the new plant as a result of a 5.7% loss in processed volume. However it is very likely that if these 'costs' are taken into account, the above figure would easily exceed \$0.5 million.

Investments have also been made in the *organisational and human capacity* of staff and farmers in relation to organic production, handling and processing. This include hiring an overseas consultant several times to set up the internal control system (ISC) used for group certification and to train management and technical staff; hiring 17 field staff and registering 133 outgrowers; payment of house rent for these staff (rent is paid 2 years in advance in Ghana); training of field staff and growers in organic methods, fruit handling, hygiene, record keeping for the ICS and health and safety; and a 3-hour training of 1400 factory workers in the handling of organic fruits. The total costs of these investments is also not easy to calculate but together with certification they are in the reign of \$0.1 million and not easily recovered in a de facto de-certification scenario.

The long distance between the organic pineapple outgrowers and the cut-fruit processing facility, as well as the likely problems of selling the variety grown by them on the conventional market, means that the conversion of this scheme to conventional production is unlikely to be profitable in its own right. Hence it is realistic to assume a 80% write-off for the investments in physical structures in the Central region as well as for investments in human and organisational capacity.

Costs to the small exporter

In his own assessment, the most likely consequence of Scenario A for the small exporter would be closure of his business. This is because of the heavy reliance of exports on organic papaya by air freight to the UK, for which no technical and few business alternatives exist, combined with a lack of financial strength.³⁰ The UK is the main destination for the core product, organic papaya, and this is where his commercial links are strongest. And while he has increased sales to other EU countries in recent years in a move to diversify the customer base, these are yet too small to compensate for the loss of UK customers. Moreover, the prices offered for organic papaya by German and Dutch importers are often only equal to or below fob costs. Being a small Ghana-based company with few collateral assets, it would be difficult to obtain affordable credit to manage a transition away from a reliance on the UK market (or from a reliance on products depending on air freight). Such a transition is likely to take several years. As discussed earlier, conversion to conventional production is not an option in the case of the papaya trade, which is dominated by large low-cost Brazilian producer-exporters. The strong price competition in the conventional market for fresh fruits in general, in the UK and elsewhere, also seems to rule out

³⁰ The implications for the mango scheme, which is under organic conversion, and for the pineapple scheme relying mainly in sea freight, are less clear and were not considered by this study.

this option for his non-core products (pineapple, passion fruit and mango), particular given the small size of the company.

The sunk costs relating to the *physical investments* made by the company in the organic papaya operations relate to construction of a packing shed in the field with potable water and toilet facilities; a 20-year lease on 250 acres of land; a 1.5 acre trial farm for organic MD2 pineapple; establishing offices in Accra and Bremen; purchase of two trucks; a lease on a warehouse; and grading of a local feeder road. No investments have been made in cool chain facilities as these were deemed unnecessary for fresh fruit exports by air.

Investments in *human and organisational capacity* resemble those of the 'large exporter' in type are on a smaller scale. The total cost of running all organic field operations (papaya and pineapple) is estimated by the exporter to be roughly \$204,000 per year. Most of the costs were incurred for a period of 1-2 years prior to certification.

No attempt was made to arrive at an independent calculation of the total sunk costs incurred by the 'small exporter' using estimates for each of the above items. However, the exporter estimated that he has invested a total of \$1.0 million in Ghana over the last 10 years and another \$700,000 in his German office. Should the business close, the greater proportion of this will not be recoverable.

Impacts on direct employment

The large and small exporter employed 105 and 23 workers, respectively, in their organic operations.³¹ These numbers do not include permanent or casual workers hired by organic outgrowers. In the first case 52% and in the second case 25% were women.

The workforce was in both cases predominantly young. Most unskilled factory staff employed by the large exporter were 18 – 25 years. The average age of the male workers participating in these focus group discussions was 27.5 years, while for females it was 25.9 years. The majority of the

³¹ For the 'large exporter' this figure was calculated as the number of workers employed in the organic field operation (17 permanents plus an average of 5 casuals assumed employed at any given time) plus 5.7% of the factory workforce of 1464 people (including engineers and managers) which is the share of organics in total export volume. In case of the 'small exporter', whose operation is 100% organic, the number represents all permanent employees (20) plus an estimated 3 casuals employed at any given time.

organic field staff were below 30 years. (The age structure of staff employed by the small exporter was not systematically assessed, but their average age is estimated at *ca.* 35 years.)

Interviews with half of the 8 certified papaya outgrowers currently being used by the small exporter suggests that these farmers employed a total of 58 full-time equivalent farm workers (1.5 worker per ha of papaya). Many of the workers came from Togo or from poorer regions within Ghana. In the case of the large exporter, six interviewed pineapple smallholders employed on average 2.3 full-time equivalent workers (mainly men), corresponding to an estimated total of 179 workers employed by the farmers in the Organic Collective (0.5 worker per ha of pineapple). The smallholders interviewed stated that they were now hiring three times as much labour on their pineapple farms compared to before organic conversion. It is estimated that 3 full-time equivalent workers were hired by the 25 members of the organic coconut scheme as a whole.

Thus the two organic export operations employed a total of 368 full-time workers, of which 128 were directly hired by the exporting firms. If we add to this number the 111 smallholders/outgrowers³², and assume that 0.5 family member on average works full-time with each farmer, then these operations generated employment for a total of 535 people.³³ In Scenario A, if we optimistically assume that the export firms and smallholders are able to retain half of their workforce, and that the conventional business of the 'large exporter' is not affected, then there would be a loss of 184 jobs. In a more pessimistic interpretation Scenario A, all 368 jobs would be lost while some of the outgrowers would themselves become underemployed and be forced to seek employment off their own farms.

The second scenario does not entail job losses.

COSTS TO THE UNEMPLOYED AND THEIR DEPENDENTS

Workers' incomes differed significantly between the two exporters and between those directly employed and those employed by the outgrowers. For the large exporter, the average salary for the 17 organic field staff was \$244 per month, excluding benefits, ranging between \$194 and \$378 depending on job type. Permanent labourers earned \$198 per month, while casual workers earned an equivalent of \$136 per month. In all cases these salaries were two or three times higher than what workers said they could obtain in local alternative employment (often in the informal

³² I.e. the 8 papaya, 78 pineapple, and 25 coconut farmers.

³³ In the context of increasing land scarcity, it is noteworthy that the land base of this employment is only 485 ha.

sector). These wage gaps seemed larger for women than for men. One woman said she was now earning 5 times more than in her previous job as a waitress.³⁴

All the interviewed staff of the 'large exporter' worked on average 5 days per week, 8 hours a day, and had 4 weeks of paid annual leave. Women were entitled to 3 months of maternity leave and men 2 weeks of paternity leave. Other important non-salary benefits included free accommodation (field staff only), membership of the national social security scheme, free medical care, lectures on health, free transport to and from work (allowing women to get safely home from work after dark), soft loans, salary advances, a 75% lunch subsidy, free Internet access, and, for some, assistance for further education. These benefits are not quantified here, but clearly exceed what may be obtained in most other employment in Ghana.

The permanent organic field staff of the 'small exporter' earned somewhat lower salaries, ranging from \$65 to \$97 per month. There were also in this case important benefits such as rent allowance (valued at \$22/month), free medical care, coverage of funeral expenses for family members, and 'ad hoc financial emergency assistance'. In all cases interviewed staff stated that these salaries and benefits were greater than what they could obtain elsewhere.

The interviewed outgrowers stated that they paid their farm workers the local wage rate. Permanent workers on the papaya farms earned around \$65 per month, plus benefits such as free breakfast and accommodation. Casual labourers on pineapple farms earned \$3.2-\$5.4 per day, depending on the nature of the work. Unfortunately, time and resources did not permit interviewing to be conducted with farm workers, so the latter figure could not be independently verified.

If we adjust the salary of the permanent factory 'floor' workers (NGC 184 per month) and of the lowest paid 'small exporter' organic field staff (NGC 60 per month) using the World Bank's 'Purchasing Power Parity' (PPP) index for Ghana, they equate to \$973 and \$317 per month,

³⁴ In case of job loss, the risk of unemployment or reliance on very low-paid work was high in all the areas visited. The female factory workers interviewed had all previously been self-employed (bread baking, seamstress), had worked in the informal sector (e.g. waitress), or had been unemployed or in school before being hired by the 'large exporter'. The male workers said that the alternative to their present occupation was unemployment, or very low paid work such as hawking, taxi driving or working in a shop.

respectively.³⁵ These figures do not indicate wealth, but they are still respectively 242% and 44% greater than Ghana's GNI per capita (\$220 per month, expressed in PPP terms).

Workers and farmers participating in the focus group discussions were asked the number of persons they were supporting through their incomes. The 18 interviewed workers employed by the 'large exporter' were on average supporting another 4.8 family members (household size of 5.8 persons), including spouses, own children, siblings, parents and nieces and uncles. Most were contributing substantially to the education of children and siblings. Hence an estimated 742 people were dependent for food, shelter and education on the employment (of 128 staff) in the organic businesses of the two exporters. As for the organic outgrowers, the relatively large papaya farmers each supported an average of 9.7 persons (85 in total), including several university students, while the pineapple farmers each supported 9.3 persons (806 in total). The household size of the coconut outgrowers is conservatively estimated at 8 persons (200 in total) and those of the farm workers are estimated at 6 persons (1440 in total). This means that the incomes of in all 3273 people directly related to the organic operations would be at risk under Scenario A.

COSTS TO ORGANIC SMALLHOLDERS AND OUTGROWERS

For all three organic outgrower schemes considered there are relatively large domestic and regional conventional markets for the products concerned – papaya, pineapple and coconut. This means that the smallholder outgrowers in principle could maintain production levels and sell their produce in these markets if they lost access to the organic export markets (a likely result in Scenario A). We assume, very optimistic, that the large size of these markets means that the additional supply resulting from this trade diversion will not depress producer prices in the affected areas. In this situation the costs to organic smallholder outgrowers in terms of lost revenue is simply the difference between the organic export price and the local market price, multiplied by the volume normally sold to organic exporters. Table 4 below shows the resulting loss in sales revenues, which range from \$781 to \$2880 on average per farmer, depending on the scheme in question. Hence there is a very significant loss even under optimistic assumptions.

³⁵ The World Bank's Purchasing Power Parity index gives an indication of the number of units of a given country's currency that are needed to buy the same amount of goods and services that a dollar would buy of US goods and services. In the case of Ghana the figure is New Ghana Cedis 0.1890 rather than 0.9637, which is the current dollar exchange rate. The Gross National Income (GNI) per capita for Ghana is \$43 per month in nominal terms and \$220 per month expressed as PPP. The World Bank uses this index in its calculations of proportions of national populations living under \$1 or \$2 per day.

Table 4. Revenue loss to outgrowers in Scenario A under optimistic assumptions

Organic product	Number of outgrowers	Total volume currently sold to the organic exporter (tons)	Current organic producer price (\$/kg)	Current local market price (\$/kg)	Revenue loss, all outgrowers (\$/year)	Revenue loss per grower (\$/year)
Pineapple	78	1404 ¹	0.27	0.11	224,640	2880
Coconut	25	122 ²	0.27	0.11	19,520	781
Papaya	8	150 ³	0.20 ⁴	0.10 ⁵	15,000	1875
Total	111	1676			259,160	2335

Notes:

¹ According to interview with the executive of the Organic Collective.

² Exporter's procurement estimate for 2008 (volume before processing).

³ Conservative estimate based on export performance over the last 3 years (resuming this level this would require re-certification of more outgrowers or expanding the 38 ha of the current 8 outgrowers. A yield of 4 tons per ha is assumed.)

⁴ Calculated from the fixed price paid by the exporter of 0.7 GC per crate (3.5 – 4.0 kg).

⁵ According to the outgrowers, the local price fluctuates between 1-1.5 GC and 7 GC per 50 kg crate, depending on season and harvest levels. Based on this information, an average local price of 4.5 GC per 50 kg crate was assumed.

In a more pessimistic, and arguably also more realistic, assessment of Scenario A, it is likely that the volume produced will fall, say by 25%, as a consequence of the first scenario. This is because lower producer prices will discourage farm investments and/or force less efficient or less resourceful producers out of production. Yields are also likely to fall due to reduced agronomic learning opportunities (the discontinuation of extension visits from scheme staff and reduced exchange of technical information among outgrowers). Outgrowers will additionally lose access to the interest-free loans which exporters have been making to encourage expansion or rejuvenation of their farms. In this version of Scenario A, we furthermore assume a fall in local prices of 10% as a consequence of expanded supply. Together these effects will result in a total revenue loss to the 111 outgrowers of \$317,445 per year (Table 5 below), equivalent to a 71% reduction in the revenue they earned while organically certified.

Outgrowers may of course also shift to other crops as a compensating measure. Cocoa is currently a profitable cash crop in Ghana, but adverse agronomic conditions preclude its production in two of the outgrower areas and in the third area land suitable for cocoa was scarce and very expensive. The crop alternatives faced by the outgrowers are low-value food crops such as cassava and maize or locally consumed vegetables, all of which are subject to market gluts and uncertain marketing conditions.

Table 5. Revenue loss to outgrowers in Scenario A under realistic assumptions

Organic product	Number of outgrowers	Total volume currently sold to the organic exporter less 25% <i>(tons)</i>	Current organic producer price <i>(\$/kg)</i>	Current local market price less 10% <i>(\$/kg)</i>	Revenue loss, all outgrowers <i>(\$/year)</i>	Revenue loss per grower <i>(\$/year)</i>
Pineapple	78	1053	0.27	0.10	273,780	3510
Coconut	25	91.5	0.27	0.10	23,790	952
Papaya	8	112.5	0.20	0.09	19,875	2484
Total	111	1257			317,445	2860

COMMUNITY IMPACTS

Community-level multiplier effects

The previous discussions show that the development of organic fruit exports has generated local employment as well as significant income increases and benefits for most of the concerned workers and outgrowers.

Income growth among small agricultural producers in developing countries has relatively high multiplier effects on the rest of the economy (Hazell 2007). Estimates from Africa show that between \$0.96 and \$1.88 additional income is created in the rural sector for each \$1 increase in farm income (DfiD 2005). This is due to the high propensity of smallholders to consume locally produced goods and services. Increase in agricultural income also has high poverty reduction effects since most smallholders are relatively poor. Most of the interviewed organic outgrowers resembled 'typical' smallholders in their expenditure patterns. We can therefore justify applying a multiplier of 1.2 to the 'optimistic' estimate (\$259,160) of the revenue loss suffered by the outgrowers in case of organic de-certification (Scenario A). On this basis we estimate an additional loss of income to other groups in the local communities of \$310,992 per year. Altogether an economic loss to the concerned rural communities of \$570,152 per year will occur. If this figure is divided by the local average informal sector annual wage (\$778 per year), then the local multiplier effect of the income lost will correspond to 733 informal sector jobs.³⁶ This is of course a rough approximation but it illustrates the broader economic ramifications of halting air-freighted organic exports from countries such as Ghana.

³⁶ This is the wage rate at which several farmers interviewed paid their permanent workers.

The total annual salary of the 368 workers employed in the organic operations was calculated to \$503,653. The multiplier effects of this income was estimated in the same way as in the Kenyan case study, while using the same informal sector annual wage as in the previous section. In this case the local multiplier effect of the income lost to workers will correspond to 311 informal sector jobs.

On this basis, the total number of people whose livelihoods will be impacted by organic de-certification is 4316. This figure comprises the 111 farmers and 368 workers employed in the organic operations, together with their dependents, plus 1044 informal workers whose wages can be funded from the local expenditures of these farmers and workers.

Expenditures and investments

To further investigate the economic impacts of increased incomes on local communities, and by implication, the wider ramifications of a ban on air freight, focus group participants were asked whether and how they had spent the income earned through organic agricultural work. The individual responses discussed below will illustrate the increases in expenditures and investments that underlie aggregated numbers such as the ones above. At the same time they illustrate the kind of improved economic welfare enjoyed by workers and farmers as a result of organic conversion.

Improved ability to support children through school and through further education was by far the most often cited improvement in expenditure capability by both workers and farmers. A more varied and protein-rich diet for children and adults was another ubiquitous change. House construction had become an expenditure priority for many as had paying for water and electricity connections. Workers also noted a greater capacity for household health expenditure as well as for assisting relatives in need. These expenditures in turn stimulated local businesses. In one village, five shops had opened where there were none before since organic conversion in 1998.

In respect of productive investments, most of the interviewed outgrowers had greatly expanded their own organic farms since conversion. This had in turn created additional employment as well as increased demand for land, planting materials and farm implements. A few well-to-do farmers had also invested in other high-value farming enterprises, notably cocoa (outside their home area) and *Jatropha* biofuel in one case. Several of the farmers had bought taxis or trucks to rent out, while the workers of the 'large exporter' observed that most of the taxis in town were owned by their colleagues. These had also invested in small shops and service facilities (bars, beauty salons) and were employing other people to mind them.

SOCIAL IMPACTS

Farmers and workers as well as community leaders had noticed social changes associated with increases in incomes and employment. The factory workers observed that the new employment opportunities offered by the cut-fruit processing facility had been important for ‘taking young people off the streets’ and expressed a belief that staff cuts would lead to an upsurge of ‘crime, drinking, child neglect and prostitution’ in the town. In the communities of the organic out-growers, the most commonly noted ‘social’ changes brought about by the organic schemes were improvements in basic amenities and infrastructure such as piped drinking water, graded feeder roads, improved conditions for teachers (encouraging them to live and work in the village), and a new community centre. Many of these improvements were the results of ‘social projects’ organized by the organic schemes; a few were financed through the Fair Trade premium. Members of the Organic Collective also observed that group certification had entailed the formation of a revolving credit scheme and a greater social interaction among pineapple farmers. Both these activities are normally associated with trust building.

SUMMARY AND CONCLUSION

Under Scenario A, both Ghanaian exporters would probably incur substantial losses of volume and profits as they attempt to retain organic certification while targeting other markets outside the UK or selling their produce as conventional in the UK. However, the viability of these strategies are uncertain in both cases due to specific product characteristics and to the thinner and less remunerative non-UK EU markets. The de facto de-certification in Scenario A will have very severe consequences for workers and organic smallholder outgrowers and for the households and communities in which they live. Each of the 111 outgrowers will lose farm revenues in the order of \$2335-\$2860 per year due to disincentive effects and to the loss of the organic export premium, in all \$259,160-\$317,445 per year. These losses to farming livelihoods will occur in areas with few crop alternatives. An estimated 368 workers – mainly young men and women – in the two organic operations will lose their jobs and for most this will mean prolonged unemployment or working for between one-half and one-third of their current salaries. In all, the annual salary loss will amount to about \$0.5 million. The multiplier effects of these changes in income and employment means that de-certification is likely to impact negatively on the livelihoods of more than 4000 rural people. Workers and community leaders were anxious that this would accentuate social problems such as crime and prostitution in their communities.

7. Conclusion

A possible Soil Association ban does not threaten the existence of organic agriculture in developing countries, nor will it destroy the development of the organic market in the UK. It will however have severe effects on the future of organic agriculture in some developing countries, particularly low income ones where exporters of fresh produce generally tend to be very dependent on air freight, and give the UK market a sizeable dent.

In developing countries it will also have localised but profound effects on employment, income, transfers, assets and consumption. Two case studies show that between 2,000 and 3,140 persons will be severely affected in Kenya and 4,316 persons in Ghana. These case studies allow some very provisional general predictions about the overall impact of a ban on livelihoods. If the Kenyan outcomes based on conditions of commercial farming can be considered as a model of outcomes generally for fresh vegetable production in developing countries, and the Ghana outcomes based on conditions of smallholder and outgrower production can be considered a model for outcomes generally for exotic fruit production, then the total number of livelihoods compromised (weighted by the rough shares of these two systems in airfreight exporting) will be at least 21,500.³⁷

In the UK sales of organic fresh produce are likely to fall by around 7% as a result of a combination of static and some dynamic effects. Sales of organic fresh vegetables will fall by around 10% on the same basis. Some importing companies, particularly those carrying high proportions of organic produce, will go out of business or follow exporters in reverting to conventional operations.

The last of these points reflects a more general aspect of the results of a ban. Any such ban will have the perverse effect of most damaging the owners and employees of those companies involved in air freighting that have the highest component of organic production, the largest volumes of organic production and the most labour-intensive (employment creating) production systems.

³⁷ Based on the sum of around 15,000 livelihoods affected in the first system and about 6,500 in the second, more labour-intensive system. The total number of people impacted in relation to discontinuation of imports of temperate fruits and exotic vegetables in developing countries are not considered here, as it is assumed that the majority of production of these crops takes place in more developed countries.

Together with the adverse effects that a ban would have on the status and morale of developing country organic sectors - as well as on relations within the international organic movement - these considerations suggest that looking for ways to reduce barriers in international organic trade rather than increasing them (however inadvertently), would better serve the purpose of furthering organic objectives worldwide.

References

- Barrow, S. (2006) *South African Organic Market Study*, EPOPA, Bennekom (NL).
- Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft (2005) *Ökologisch Märkte Erschliessen (2005)* (Berlin).
- Department for International Development (DfID) (2005) *Growth and poverty reduction: the role of agriculture*, London
- Dosch, T. & Gerber, A. (2007) *Die Ökologische Lebensmittelwirtschaft in Deutschland 2006: Zahlen, Daten, Fakten*, Bund Ökologische Lebensmittelwirtschaft.
- Duxbury, R. (2004) 'The UK Organic Market and the Commercialisation of the Organic Sector', presentation to AAOCH/FAO Seminar, 19 March
- European Parliament Committee on Agriculture & Rural Development (2006) *Draft Report on the Proposal for a Council Regulation on Organic Production and Labelling of Organic Products*. Provisional 2005/0278(CNS), Brussels, 27 November.
- Gibbon, P. (2006) *Decoding Organic Standard-setting and Regulation in Europe (1991-2005)*, UNIDO Working Paper, Vienna.
- Gibbon, P. & Bolwig, S. (2007) *The Economics of Certified Organic Export Agriculture in Tropical Africa: a Preliminary Assessment*. DIIS Working Paper no. 2007/03, Copenhagen.
- Gibbon, P. & Ponte, S. (2005) *Trading Down: Africa, Value Chains and Global Economy*. Philadelphia, Temple University Press.
- Hamm, U. (2007) 'Boom und Differenzierung: Tendenzen und Herausforderungen am Biomarkt', presentation to Bund Ökologische Lebensmittel, Tag des Ökolandbaus.
- Hazell, P. (2007) *The Changing Context for Small Farms and Implications for their Future*. DIIS Working Paper no. 2007/11, Copenhagen.
- Kiarii, E. (2006) 'The Organic Sub-sector in Kenya', *Kilimohai*, vol. 1, no. 1, Nairobi.
- Organic Certification Directory (2004) Grolink, Sweden.
- Soil Association (2007 and other years) *Organic Market Report*, Bristol.
- Tesco (2007) *Corporate Responsibility Review 2002*.